

THE DELUGED CIVILIZATION OF THE CAUCASUS ISTHMUS

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INTRODUCTION.

The material for all of the chapters has been gathered and some of them are completed. The influx of settlers into the Caucasus isthmus and the commencement of construction work on the Manytsch canal have made it advisable to publish this portion of the work, to prevent if possible the loss of invaluable archeological material.

Well known and accessible authorities only have been referred to, in order that the reader may have the opportunity of verifying the facts himself. In translating, no changes have been made from the accepted meaning except where absolutely necessary. . E. g. in Homer's description of the route to Erebus, "lacheia" is given by Liddell and Scott as "fertile" sand by other authorities as "rugged." But this misses the whole meaning of Homer, for "lacheia" means the kind of a shore which, when you come to it, you know that something is going to happen to you. I have translated it as "ominous," and in the same passage I have rejected the generally accepted meaning of "euroenta" as "mouldy" because it really means something of great size and frightening, i.e. "monstrous."

It is hoped that this investigation will establish Greek mythology in the position it should have. It is not a collection of fables; it relates to the same place and to the same facts as do the Semitic mythologies. The northern races had their revelation, and believed in one god, Ur or Al, just as the Semites believed in El or Jah, and both degenerated for a time into polytheism and both emerged from it. The northern has a much higher spiritual significance (compare the lives of Solon, Socrates and Leonidas with those of Abraham, Isaac and Jacob), but no theology is complete which does not include both revelations; which became united at the commencement of the Christian era.

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CHAPTER 1.

THE GEOGRAPHY OF GREEK AND SEMETIC MYTHOLOGY

In 1882, in the course of some work for honors in Classics, the writer was forced to give rather close attention to the problem of obtaining a more consistent concept of the geography of Greek mythology.

This had been a subject of investigation by the Greeks themselves. They considered it very important, and there are few Greek writers of reputation who have not discussed it. Comparing the conclusions of Herodotus, B.C. 484, with those of Eratosthenes, B.C. 276, and "of Strabo, B.C. 54, we find considerable progress in some directions but the larger fields inviate.

Anything the Greeks thought to be important we may be sure we shall find to be important, so soon as we really understand it. This may take time; Zeno's paradoxes were considered trivial up to the middle of the nineteenth century because we did not realize how slovenly and incomplete were our concepts of number and continuity, of the infinite and of infinitesimals; but a large part of our recent advance in mathematics is based on an apprehension of Zeno's real thought.

The Greeks had sound reasons for believing the geography of their myths to be important, and as we shall see, they were right. Primitive man was very literal minded. Nothing, it will be shown, was further from his thought than the idea of making up stories about the sun and the moon and other natural phenomena; any one doing this would have been considered feeble minded. The myth, in the modern sense of the word, is not found until a comparatively recent date. To the Greeks of time prior to this a myth was an accurate and literal statement of certain important facts; important because, as will appear, the knowledge of them might be a matter of life and death, not only to individuals but to whole communities.

There was one very practical reason. The Greeks were great traders, and colonizers for purposes of trade. It many times happened that for very long periods trade with important customer nations or colonies had to be discontinued. Other nations might rise to dominance in sea power and block the ' route. The particular commodities traded in might be better obtained from other places. The customer nation itself or the colony might be substantially wiped out by war or pestilence or inundations, and under such circumstances that there was no prospect of re-establishment. The only record that such trade or such place or such colony had existed would be the myth preserved in the home temples. And when, perhaps many centuries later, new places to trade or to found colonies were being sought, the myths would be consulted. One instance of this is the remarkable and unsuccessful search of the Phoenician traders for the lost Pillars of Hercules. (Strabo, II. 5.) Remarkable because, as will be shown, it was the ocean (the "Asiatic Mediterranean" of geologists, see Encycl. Brit. art. Caspian; the Ocean of Atlantis of the ancients) which had disappeared and not the pillars marking its entrance. And unsuccessful because, owing to the changed meaning of a word, the search was

made west instead of east. An interesting example in Greek history is the founding of Cyrene by the Theraeans. (Herod, IV. 155.)

Every precaution was therefore taken that the myths should be transmitted accurately. The term "muthologeuo" used by Homer means "to tell word for word." That the Greeks were convinced that the means taken had been adequate to ensure accuracy is shown by such incidents as the handing over of Salamis to the Athenians by the Spartans on the evidence of a single line of a myth.

They had much positive evidence of accuracy, evidence of extreme accuracy. Instances of this will be found in the chapter on myths and omens. Where there was error it was substantially invariably due to a change in the meaning of a word, or the word had come to be pronounced in a different way, as our "wind" and "gold" have become "wind" and "gold." The oracle at Dodona was founded by three elders "palaiai," but when, in time, this came to be pronounced "palaai" the reciter of the myth, who could not change the quantity of the syllable, since it was in verse, was understood as saying that the oracle was founded by three "peleiai," i.e. pigeons. I have not been able to discover any instance of a myth having been incorrectly transmitted verbally, though in later times there were several instances of forgery.

It was therefore very disturbing to the Greeks that in some of the older myths the routes stated to have been taken on certain expeditions could not be reconciled in any reasonable way with the known geographical facts. Why did Hercules, returning to Tiryns with the oxen of Geryon, from Gades and the Pillars of Hercules, pass through the country on the north shore of the Black Sea. Why did not Mt. Atlas, in Libya, correspond with its description in the myths. How was it that the Argonauts, after entering the mouth of the Danube, passed through Egypt on their way to the Adriatic. Where were Hyperborea, the red island, Erythia, the islands of Ogygia and of the Hesperides. There were many writers on the subject but Herodotus and Strabo are perhaps the best to consult for examples of the difficulties met with and illustration of their apparently insuperable nature.

Lord Rayleigh had not then given his word of encouragement to those considering prospection of well worked fields; that the great discoveries of the future would be the result of investigation of apparently unimportant discrepancies, of "examination of the third decimal point," as he put it. It was not with any hope, acknowledged even to myself, of finding anything which would explain this question of a thousand years but to see the difficulties as a whole that as a preliminary substantially all the known myths which had geographical relations were written out in standard form, with their local and temporal variants, and tabulated and compared.

TABULATION AND COMPARISON OF MYTHS

From this tabulation it was apparent that:

- a. The mythic expeditions were quite consistent and understandable as regards the first and last portions of the routes.

- b. The inconsistencies with known geographical facts were consistent with each other.
- c. The expeditions whose objective was in the far west, in the Atlantic Ocean, beyond the Pillars of Hercules, e.g. the expeditions for the apples of the Hesperides and for the oxen of Geryon, always first went east, into and along the shores of the Black Sea, to the Caucasus; then, with some incoherency as to route, appeared in the Atlantic Ocean, accomplished their quest, and after a second vagueness as to itinerary, returned by way of the shore of the Black Sea to Greece.
- d. In a number of instances members of the same family lived, some in the far east, some in the far west; no reference to or explanation of the separation is given, and the members apparently remained in communication. E.g. Prometheus was in the Caucasus, and Echidna and Typhon in its neighborhood; but Atlas and the Hesperides (the brother and nieces of Prometheus) and Geryon (the brother of Echidna) and Orthus (son of Echidna and Typhon) were beyond the Pillars of Hercules, the exit to the Atlantic Ocean.
- e. In some instances there was contradiction as to locality. E.g. Mt. Atlas was usually placed on the shore of the Atlantic, but sometimes in the Caucasus; the country of the Hyperboreans was placed sometimes far west, sometimes not far from the Black Sea.
- f. There is a gap in the geography of mythology. There are many myths connected with places lying east of Sicily and west of the Caucasus, and many with places in the Atlantic Ocean, but none with the region between Sicily and the Atlantic Coast.

The results of this tabulation were collated with the following well known facts:

- a. The early myth tellers, including Homer and Hesiod, had no knowledge of Spain or of the Atlantic Ocean. This did not come till several centuries after the time of Homer.
- b. Not one of the places stated in the myths to have been in or on the Atlantic Ocean has ever been satisfactorily identified. E.g. the island supposed to be Erythia is not red; the supposed Gades is not well watered, on the contrary was notorious for its bad water; the mountain identified as Atlas is relatively low and is not near the shore; the Atlantic Ocean itself does not correspond with the description of the Ocean of Atlantis for it is not shoal and un-navigable opposite the Pillars of Hercules and is not entirely surrounded by land. No submerged area has been found in the Atlantic Ocean corresponding to a submerged Atlantis. It has been suggested that it might exist but have been missed between the successive soundings taken by wire, since the intervals are large. But in 1913 the writer invented the method of taking soundings and of locating icebergs by trains of sound waves (single impulses are diffracted), which gives continuous soundings by echo, and this has been used all over the North Atlantic; by the iceberg patrol in 1914 (see U. S. Hydrographic Office Bulletin, May 13th, 1914), by the United Fruit Co. in 1919 and 1920, and by the U. S. Navy, in 1922 and 1923 ; but no such submerged area has been discovered. Other discrepancies are pointed out by the authorities referred to.

c. The Caucasus is, in all the older myths, invariably placed "at the extremity of the earth, on the border of Oceanus."

2. THE MISPLACED MYTH AREA

These data gave, so to speak, a sufficient number of equations for attack. The singular gap in the myth field, between Sicily and the Atlantic coast of Spain (Iberia), suggested that the problem was of the nature of a block puzzle, i.e. that a block of the myth map had been displaced.

Which was the misplaced block, and where did it belong. Several plausible solutions suggested themselves but on investigation had to be rejected. It was finally noted that there was a curious one-to-one correspondence between points on the eastern shore of the Black Sea and on the west shore of the Mediterranean, i.e.:

- a. In the east we have a country, Iberia, stretching from the Black Sea to the Caspian. In the west we have a country, Iberia, stretching from the Mediterranean to the Atlantic.
- b. The northern boundary of both Iberias is a chain of high mountains; running from sea to sea, east and west, in both of which Mt. Atlas had been placed.
- c. In the east we have the Hypanis; in the west, Hispalis and Hispania, and other pairs of similar or identical names, e.g. Aragon and Aragus.
- d. In the east we have the country of the Libui, about the mouth of the Danube and inland; in the west we have Libya.

Placing the Black Sea block to the west of the Atlantic block would still leave empty the space between Sicily and the Atlantic shore of Spain; the mythic expeditions would be still more difficult to explain; there was a continuity between the Black Sea and Greek blocks which could not be disturbed by removal of the Black Sea block. Obviously it was the Atlantic block which must be transferred to the eastern edge of the Black Sea block.

3. PROOF THAT THE PROPOSED LOCATION OF THE MYTH AREA IS CORRECT - THE LOST PILLARS OF HERCULES

The next step was to ascertain if the new arrangement could pass the severe tests requisite to establish its claim to be the correct solution, i.e.

- a. It must be shown that, at the time at which the events related by the myths occurred, there was on the eastern edge of the Caucasus a body of water of such magnitude that it could be rightly called an ocean, and entirely surrounded by land.
- b. It must be shown that at that time ships could sail from the Black Sea into that ocean.
- c. It must be shown that the Pillars of Hercules were at the entrance to that ocean.

d. The place names of the former Atlantic block must be satisfactorily identified with localities in the neighborhood of the Caucasus, of the Black Sea and of that ocean (which we will call the Ocean of Atlantis, to distinguish it from the Atlantic Ocean).

e. The routes taken by the mythic expeditions must be consistent and in accord with the geographic facts.

f. There should preferably, but not necessarily, be some explanation of the misplacement of the Ocean of Atlantis block to the far west. Also some explanation of the fact that the misplacement was not discovered.

It was found that the new arrangement met the requirements, i.e.

a. There was such an ocean. It is known to geologists as the Asiatic Mediterranean. It was the original Atlantic Ocean.

Geologists say it was in existence as late as the time of which the myths tell. It extended from the Caucasus to Mongolia, 1850 miles, i.e. about the same distance as from England to Newfoundland. Its eastern portion was probably at one time connected with the Arctic Ocean. The Caspian, Aral and Balkasch Seas are what is left of it; i.e. the part which has not yet dried up. (See Encyc. Brit. art. Caspian.) The Caspian and the Aral were still connected as late as B.C. 200, and merchandise from India was still brought by boat from Faisabad to Sura, in the Caucasus Valley, but a few years later caravan routes were established. This date is confirmed by the Chinese histories. Excavations should be made at Faisabad.

For mission of the Three Wise Men of the East, their presents, attendants, see Strabo XV; 1; 73.

b. Strabo states that in his day, B.C. 50, there was a tradition that the Caspian had been connected with the Black Sea by way of the Sea of Azov. (Strabo, Book 11:7; 43.) This tradition is fully confirmed by geologists, i.e. not only that the Black and Caspian were at one time connected, but also that the connection was by way of the Sea of Azov. (Encyc. Brit. art. Caspian.) I have found that the connection was by way of the Manytsch Lakes. At the present time part of the water of these lakes flows into the Sea of Azov, and part into the Caspian. (Note. Since the above was written the Soviet government has announced its intention of re-establishing this waterway. On account of the fall in level of the Caspian, locks will be necessary. A practically unlimited amount of water power should be obtainable, by the method I have suggested in connection with the Dead Sea. Scientific Amer. April 30, 1921.)

A map showing this route, from the Black Sea to the Ocean of Atlantis via the Sea of Azov and the Manytsch Lakes, is given in the chapter on ATLANTIS.

c. The Pillars of Hercules were found; and at the entrance to the Ocean of Atlantis.

For evidence of the fact that it was known to the ancients that the Pillars of Hercules were lost; for an account of the various expeditions sent out by the Naval College of the Phoenicians at Sidon to discover them; for the reasons why the Phoenicians decided that the capes of the straits of Gibraltar were not the true Pillars of Hercules; for an explanation of their nature and use; for evidence that the true Pillars were known to two Asiatic kings in the seventh century B.C. and later mistaken for another monument by Ptolemy; see the chapter on PILLARS of HERCULES.

d. The identification :was complete. In addition it explained some difficult statements in the myths, e.g. the heptacyclic flow of the Styx; the origin of the name Phlegethon, of the names Hades and Tartarus; Solon's account of Atlantis and Aelian's of Meropia. See the chapter on
THE ANCIENT GEOGRAPHY OF THE CAUCASUS ISTHMUS.

e. The mythic itineraries now presented no difficulties. As regards Hercules, he drove the oxen of Geryon back along the north shore of the Black Sea because it was shorter, had good pasturage and water and was level. To have gone back by the south shore he would have had to take his cattle through the Dariel Pass of the Caucasus, which was impassable for cattle, and along the mountainous south shore. His expedition for the apples of the Hesperides presents no difficulty, for Atlas (Mt. Elbruz) is within sight of the mountain to which Prometheus was chained (Mt. Kasbek), and the Garden of the Hesperides was at the foot of Mt. Kasbek. See the chapter on EDEN, THE HYPIBEREANS AND THE GARDEN OF THE HESPERIDES.

As regards the Argonauts, they sailed back by the north shore of the Black Sea to the mouth of the Danube; up the Danube, through the confusing channels of the Balta (Lake Tritonis of this myth; there was another Lake Tritonis in Africa), up the Save and Kulpa to above Karlstadt. Thence they portaged a short distance through the country of the Libui (Illiberi) and came out, at the point where Fiume now stands, into the Adriatic; thence south along the eastern shore of the Adriatic to Greece.

This route was a well used path of commerce between the Black Sea and northern Italy. It was in the possession of the Iberi and of their colonists the Illiberi and Thrasi or Rasi (Etruscans). It avoided the long journey through the Dardanelles and around Greece with its heavy tolls and danger from pirates.

It was longer and harder for the Argonauts. They took it because they had carried off the daughter and murdered the son of Aeetes, king of Colchis. The Colchians were the original black Phoenicians, the Aethiopians of Ephorus (Aithiopsis, Aieti-opis), had colonized Egypt and islands in the Aegean. They had many ships in the Black and Aegean Seas. The Iberians were their trade rivals. The Argonauts could not escape by the Dardanelles route so they took the Iberian trade route, up the Danube. See the chapter on THE DISPERSION.

For the object of the Argonaut's expedition see the chapter on THE OCEAN OF ATLANTIS AS A TRADE ROUTE; the section on Silk.

4. CAUSE OF THE MISPLACEMENT

f. The explanation of the misplacement was found to be connected with the reversal in meaning of the word Hesperus. This is derived from a root having the implication "coming up out of." The sun and stars were supposed to come up out of the ocean and to go down into it at night. Hesperus is Venus, which is both morning and evening star.

To a primitive people it was as a morning star that it was important. Travelers on the steppes have described the jubilation and songs with which the Kirgis children, who had to watch the cattle all night, welcomed it, for it meant that day was near. Even in such comparatively late authors as Homer and Hesiod it is called "heosphoros," the bringer of morning. Hesiod calls Hesperus the son of dawn.

All the associations of Hesperus were therefore originally with the east, and the Gardens of the Hesperides were so called because they were in the Far East, on the edge of the ocean, in the eastern part of the Caucasus valley.

THE GEOGRAPHY OF GREEK AND SEMITIC MYTHOLOGY

In Pindar the Black Sea is called the Axenus, or unfriendly sea. This was because long before the time of Homer, for a period of more than a thousand years, the Black Sea had, to quote the words of Strabo, "been closed to navigation," by something that had happened there, which appears (there is some evidence for this) to have struck an instinctive terror into the souls of even the descendants of those living in the neighborhood of the sea at the time and to have resulted in the absolute abandonment of that region by humanity until, long after, men began to filter back.

When they did return the Pillars of Hercules had been lost. They were never found but for lack of a better identification the name was attached to the straits of Gibraltar and the myths relating to places beyond the Pillars of Hercules, i.e. to the Caucasus region, were attached to the Atlantic and its seaboard.

5. WHY THE MISPLACEMENT WAS NOT DISCOVERED - HESPERUS THE MORNING STAR

This misplacement was clinched by a change in the meaning of the word Hesperus. It had come to mean the evening or western star. So no one thought of looking to the east for the Garden of the Hesperides. Atlas gave a good deal of trouble; there was no distinguished mountain near the straits which could by any image be considered as upholding the sky, but after a time Mt. Dyrin was accepted as being perhaps the best that could be done. Gades and Erythia also were never considered very satisfactory; in time the disagreements came to be overlooked, and there is evidence that the Homeric commentators piously, under the impression that they were correcting obvious mistakes in the text, reversed every, to their knowledge, phrase which indicated an eastern position.

It is significant that a similar confusion of meaning is found to have existed in other languages besides Greek; in all which I have examined. E.g. Genesis, 11; 2; authorized version, reads: "And it came to pass, as they journeyed from the east," but the margin says "or eastward." Clay (Amurru, p. 108) shows that the word in Isaiah 24; 15; which has always been translated "east" should probably be translated 'west," and he refers to the Talmudic Ur and the difficulty the Jews in Babylonia experienced in trying to understand how Ur, which ordinarily means light or the east, "in this connection (urya) meant darkness or the west." It existed in many other languages, and our own " east" or ' l est" appears to have been at one time "west."

The problem had then been solved. And with the more pleasure because there had been no anticipation.

II

SEQUENCES

It was then apparent that there were other results, and of great importance. Heretofore old Greek mythology had been an incoherent collection of stories. This was incomprehensible, for nothing was farther from the Greek mind than incoherence. They could not be what is called "nature myths," for my .experience with primitive man is that he does not think that way; I feel that an attempt to introduce a. nature myth into primitive Greece would have been a source of quiet tribal amusement for several generations.

Likening them then to a jumble of blocks, so soon as the geographical problem was solved the myths all fell into place; it became clear that they were a rational and consistent account of the lives of certain individuals of prominence, the so-called heroes or gods, to whom the Greeks had erected monuments analogous to the Lincoln Memorial; or had even come to worship, as the Tibetans and some tribes of India worship Queen Victoria; and of certain pioneering commercial expeditions.

This was the first major sequence, that the old Greek myths are history, of the utmost importance to archeologists, and will well repay intensive investigation.

(Note. This has for some time been recognized to be true for the later myths relating to Troy and Crete.)

1. CAUSE OF CLOSURE OF BLACK SEA TO NAVIGATION

A second came from investigation of the exact nature of the catastrophe (the greatest of which we have historical knowledge), which had closed the Black Sea to navigation for so many centuries and had caused it to be called the "Unfriendly Sea."

It was known to be an inundation, accompanied by storm and in some localities by slight earthquake shocks.

The traditions were collected, tabulated and compared. This developed the fact that there were only five traditions of an inundation of more than local character.

1. The Greek tradition; of Deucalion; the Aegean, 100 to 250 miles southwest of the Black Sea.
2. The Egyptian-Phoenician; of Atlantis and the Greeks; the western and northeastern shores of the Black Sea.
3. The Cimmerian; of the Crimea; the north shore of the Black Sea.
4. The Hebrew-Babylonian; of Noah and Atra-Hasis; the southeast shore of the Black Sea.
5. The Phrygian; of Noe; the south shore of the Black Sea.

Literal translations of these traditions will be found in the chapter on THE DELUGE; also evidence indicating that the Greek tradition was possibly transplanted from the eastern shore of the Black Sea; also discussion of the possibility that the Phrygian tradition was derived from a Semitic source.

2. TRADITIONS OF DELUGE

Dismissing for the present dubious and minor matters, the tabulation disclosed that:

- a. Every known tradition of a deluge relates to some region in the neighborhood of the Black Sea.
- b. The traditions, taken together, form a unit; relating to the west, north, northeast, southeast and south coast of the Black Sea.
- c. The only tradition which does not relate to a region in the immediate neighborhood of the Black Sea coast relates to the coast of a smaller body of water, connected at one end to the Black Sea and nearly closed at the other; which must have been affected by any considerable rise in the level of the Black Sea.
- d. There was no tradition that there had been more than one deluge in the region in the neighborhood of the Black Sea.
- e. The traditions were apparently consistent as to the time of the deluge.
- f. There was no evidence of any deluge tradition not derived from regions bordering on the Black Sea. E.g. in India no deluge tradition is found before approximately the beginning of the Christian era.

g. The traditions were not derived from a common source. Three of them, relating to : the southeast, south and southwest of the Black Sea, tell of the survival of a few individuals in an ark, and as stated above, these may be branches of the same tradition. But the Cimmerians knew nothing of an ark; to them the deluge was the terror inspiring catastrophe which had caused their few surviving ancestors to abandon the Crimea and adopt a nomadic life. And the Egyptian-Phoenician tradition is not of an ark, but of a great and highly civilized nation, driven west as their successors were in later times, by long continued famine and drought, and while in conflict with the natives of the invaded territory, wiped out to the last man, they and their foes, by the deluge.

3. PHYSICAL CIRCUMSTANCES

The consistency of these traditions suggested an examination of the physical possibility of a catastrophe of such magnitude. The circumstances were:

- a. To the east of the Black Sea and separated from it by an isthmus, the great ocean of Atlantis extended for 1,800 miles.
- b. The present width of the isthmus is approximately 300 miles, the eastern side being 80 ft. below the level of the Black Sea, i.e. sea level. When the ocean of Atlantis was at its normal level, the width must have been approximately 200 miles.
- c. The ,greater part of the isthmus is very low. A rise of 25 feet in the ocean of Atlantis would have covered an area of more than 100,000 square miles of the isthmus, i.e. the entire isthmus except the Caucasus mountains and the central portion of the Caucasus valley; the ocean would have broken through into the Black Sea and inundated a much greater area there.
- d. The Cimmerian tradition calls for an increase in level of the Black Sea of approximately 45 feet and a period of approximately twelve hours.

The Egyptian-Phoenician tradition requires a rise of 35 feet and a period of twenty-four hours.

The Hebrew-Babylonian tradition must have a rise of 40 feet on the southwest coast of the ocean of Atlantis, and of sufficiently rapid increment to carry a large vessel up the valley of the Arax into the great expanse at the foot of Mt. Ararat, and flood this expanse over an area of approximately 50 miles square. The period would not exceed a few hours, but the time taken to drain the expanse would be measured by weeks or even months.

The Phrygian tradition is not known with sufficient definiteness to calculate its requirements. It is probably a branch of the Semitic tradition.

The Greek tradition would necessitate a rise of 125 feet, on the assumption that there has been no change in the level of the region between the Black and Aegean seas; and also on the assumption that the tradition is not derived from the Caucasus region.

e. The traditions, taken as a whole, require a tidal wave on the southwest shore of the ocean of Atlantis, of a height of approximately 40 feet, lasting for approximately 12 hours, and sufficiently rapid in its onset to produce bores up the river valleys of that shore.

The evidence that the Deluge had a tidal wave character appears to be conclusive. The traditions are in agreement, and the Babylonian tradition specifically says "Like a war engine it (the Deluge) comes upon the people."

f. The ocean of Atlantis was shoal over a great portion of its area, approximately of the same depth as Lake Erie, i.e. 80 feet; but with considerable areas of much greater depth.

g. The ocean of Atlantis is known to have been at one time connected with the Arctic Ocean; in the opinion of geologists, quite recently. It is shown so connected on Strabo's map of about the beginning of the Christian era, but this feature of the map was based on tradition from time long prior to Strabo's day. The connection was wide, about 400 miles at the narrowest part, but shoal, probably not more than 30 feet deep. It was northeast of the ocean of Atlantis, where the Obi and its tributaries now are. Even at the present time the greater part of this area is below the level of the Sea of Aral.

h. The ice of the fourth and last glacial age was just passing away. The date of the deluge, from the EgyptianPhoenician tradition, is about 9,500 B.C. De Geer and Liden's date (obtained from counting the 'varves' or annual layers of the glacier deposits, and which gives very accurate results) for the beginning of glacial recession from southern Sweden is 11,500 B.C. At 9,500 B.C. there must still have been considerable glacier ice north of the ocean at Atlantis. For references and details see chapter on A POSSIBLE GLACIAL AGE FACTOR.

i. The weight of the Glacial Age ice in what is now the Obi region probably depressed the earth surface below sea level. Estimates based on Joly's investigations of mountain flotation show that the ice need not have been more than 100 feet thick. This ice would have acted as a dam to restrain the Arctic Ocean from flowing into the ocean of Atlantis if the surface of the latter were below sea level.

j. From the Babylonian version of the Semitic tradition, the flood was preceded by an intense drought lasting for six or seven years. No rain fell during the entire period, and all rivers and wells were dried up.

k. According to the Semitic or Hebrew-Babylonian tradition there was warning of the advent of the Deluge, and so far in advance as to afford time for the construction of a huge vessel. Giving due weight to the fact that the rule of the head of a family was autocratic and to the announcement of a revelation, it is difficult to conceive that such a gigantic task could have been carried to completion without some outward and visible sign. Noah was living to the east of Eden (Aetan), i.e. where the Arax flowed into the ocean of Atlantis, not far from the present Shamash. The indication of the coming Deluge was probably a continued and fairly rapid creeping up of the ocean level. This is purely

hypothetical; it is inserted to show that preparation for a Deluge so far in advance is not inconsistent with the known facts. Also because it is in accordance with the hypothesis that the ocean of Atlantis was not, immediately prior to the Deluge, in connection with the Arctic Ocean, and that its surface was somewhat below sea level.

Calculation of possible rates of no inundation from the Mediterranean side could have produced flow and other even more conclusive considerations demonstrate that a deluge of more than a fraction of the required magnitude. And aside from the matter of magnitude an inundation from the west would be hopelessly in disagreement with the other features of the traditions, e.g. the destruction of the Athenian army without any inundation of Italy or of Egypt or of the coast of Asia Minor.

4. CAUSE OF DELUGE

The problem having been formulated, the following solutions present themselves:

1. Abnormal and long continued rainfall. This must be rejected as a prime cause, though it may have been accessory.

If all the air above the ocean of Atlantis were saturated and then all the water fell as rain, it would only increase the level about 2 inches. Even with winds bringing in moisture laden air at a velocity of 60 miles per hour the total daily rise could not exceed 2 inches per day, or 7 feet for 40 days. Small areas may have a rainfall of several feet per day, but no large area can have a fall of more than about two inches; and no larger fall has ever been known over any considerable area. This fact is well known to meteorologists.

In addition it would not give the requisite rapidity of rise.

2. Abnormal winds. High winds will undoubtedly pile up water on the lee shore of a sea. If the sea is deep, the amount will vary with the latitude, since it is a function of the earth's rotation, and may amount to as much as 30 feet. But the piling up is at right angles to the direction of the wind and would not supply the water fast enough for the flow into the Sea of Azov.

If the sea is shallow we may also get sufficient increase in level on the lee shore, but there is the same difficulty in regard to the supply of water.

It would not give the requisite bores up the rivers.

Though insufficient in itself, it may have been an important accessory.

3. Earthquake. Only one tradition mentions an earthquake, and this probably of minor intensity. An earthquake which raised the level of the Obi district or that of Ust-Urt would undoubtedly have produced a tidal wave of sufficient intensity.

4. Slippage of sedimentary deposits. This is one of the most common causes of tidal waves. The Caspian is even now over 3,000 feet deep in places, and the rivers flowing into it are notorious for carrying large amounts of sediment.

A seven years drought followed by heavy rainfall might well have produced slip of sufficient amount.

5. Slipping of a dam of Glacial ice holding back the Arctic from the ocean of Atlantis. This is less probable than some of the other possible causes, but certain facts entitle it to consideration.

A combination of 1 and 2 with 4; or of 1 and 2 with 5; would have produced the Deluge of the traditions. The relative probability of these combinations is discussed in the chapter on THE DELUGE, but is of slight interest except to geologists; the important thing is the fact that there were in existence at the time of the Deluge physical causes competent to have produced the Deluge; and the Deluge traditions are at every point in complete agreement with, and consistent with, the known physical circumstances.

The second major sequence then was that the Deluge of the traditions actually occurred and substantially exactly as they describe it.

ORIGIN OF MANKIND - CONSCIOUSNESS - RESPONSIBILITY

The traditions are agreed that mankind was substantially entirely destroyed by the Deluge. That an inundation of the west shore of the ocean of Atlantis and of the coast of the Black Sea should have substantially wiped out mankind implies that, at the time of the Deluge, mankind had not dispersed beyond this region, and that the place of the origin of mankind lay within it; and was most probably the isthmus between the two inundating bodies of water, i.e. the Caucasian isthmus.

As a preliminary it was necessary to define precisely what was meant by "origin of mankind."

The existence of a mankind is a very rare, possibly a unique phenomenon. When we knew but little of the stars we thought of countless worlds; but now we know that very few stars can have a planetary system; that the planetary conditions for life are very numerous, rigid and interlocked; we may be a solitary race.

In a paper on "Molecular Physics" read before the Franklin Institute in September, 1896, I demonstrated that ability to remember and to act in accordance with that memory did not imply consciousness. Two mannikins were exhibited. One mannikin on being brought within a few inches of a candle, and facing it, thrust its hand into the candle flame, and so soon as it began to burn, drew it back. But so soon as the hand had cooled off it was thrust in the flame again.

The second mannikin was given a memory by means of the molecular hysteresis of a wire forming part of its mechanism. On being brought up to the candle it thrust its hand in the flame and withdrew it, as had the first mannikin. But it would not thrust it in the flame a second time, and if brought closer would draw its hand back, and this memory governed reaction would persist until the hysteresis effect had, in the course of some months (depending on the temperature), died down.

(Note. This demonstration was given as illustrating a theorem on responsibility, i.e. that though circumstances are responsible for man's actions, man is responsible, because he is at all times the majority of his circumstances. At any given instant his individuality is the sum of the activities of three sets of hysteresis effects, those of heredity, those of past circumstances, and those of immediate circumstances, and the measure of his responsibility is the ratio of the sum of the first two to the sum of all three. Except in the case of infants, defectives, or occurrences of very short period this fraction will always approach unity. Other deductions are contained in a paper on "Hysteresis in Moral, Social and Economic Functions," presented at the 1899 meeting of the Amer. Ass. Advancement of Science, Economic Section.)

Omitting for the present an exact definition of "consciousness" (ability to inactivate hysteresis effects, i.e. to inhibit, might perhaps do), we cannot consider the second mannikin to have been conscious. Until, then, it is shown that ability of the individuals of a species homo to react to circumstances as a man does, i.e. to chip flints, plant grain, etc., necessarily implies consciousness, we cannot say that the absence of anatomical differences between that species of homo and mankind proves that the species is mankind. This point does not affect what we are now considering but this is the logical place to call attention to it, as it will be found important; see the chapter on "THE TREE OF THE KNOWLEDGE OF GOOD AND EVIL."

It is only quite recently that archeological results have been collated in a scientific way, and up to the time that this was done it seemed a thing to be expected that mankind should have appeared on the world in due time, and if not in one place then in another. Archeologists are now substantially agreed that the early chimpanzee type of man-like beings which we call Homo Neanderthaliensis, and which existed for possibly more than 100,000 years and used rough chipped stone implements and fire, passed out of existence, possibly 25,000 years ago, as completely, as regards the origin of man, as if it had never been.

A later type, the ape type, of man-like beings, Homo Sapiens, having deer-horn flakers and making better implements of stone and bone and making painted and carved representations of familiar objects, came into being perhaps 40,000 years ago. This too passed, about 15,000 years ago; though some anthropologists believe local vestiges remain. For a clear and concise account of these two types see Wells, "Outline of History."

The authoritative doctrine at present is that mankind of today was developed from the latter of these types, gradually, and possibly in more than one place; but it will be shown that there was only one place of origin, a valley of unique characteristics, and that if mankind developed from this second type the development was not a gradual but an abrupt change.

6. BIRTH PLACE OF MANKIND

In determining the birthplace of mankind we have the following "equations."

a. Wild wheat. Wheat has been found growing wild in

1. The east Caucasus valley. Strabo, XI; 4; 3.
2. The south Caspian littoral. Strabo, II; 1; 14.
3. In the upper valley of the Euphrates. U. S. Bureau of Agriculture.

Localities 2 and 3 are separated by difficult mountain ranges, but 1 is in connection with both.

b. General archeological evidence. America appears to have been populated quite recently; farther India and China, and probably Africa south of the equator, at a comparatively late date. The earlier populated region appears to lie between Spain on the west, Burmah on the east, Finland on the north and the Indian ocean on the south.

The Caucasus isthmus is in the centre of this region.

c. Centre of gravity of nationalities. Giving a weight 1 to each distinct nationality, and locating the centre of gravity of the combined weight, it is found to be in the Caucasus isthmus.

The dispersion in the Caucasus isthmus itself was great. Some writers say that 70 interpreters, others that 300, were needed at the western terminus of the Caucasus isthmus. See Strabo, XL; 2; 16, and Pliny, N. H. VI; 5; 15. In the eastern valley they spoke 26 different languages. Strabo, XI; 5; 6.

d. Origin of religions. It was found that

1. The religion of the Egyptians was derived from the mother country of the black Phoenicians, i.e. Colchis, the western Caucasus valley, originally Eadon.
2. The fundamental Greek religion was derived from Hypiberea, i.e. the eastern Caucasus valley; with additions from Egypt.
3. The Syrian and Babylonian religions (worship of Thammuz, Adonis, etc.), were derived from the northern slopes of the Caucasus, i.e. from the neighborhood of Mt. Tamischeira, the river and peninsula of Acheron or Apseron and the river Udonis. Thammuzon is "land of Thammuz" and is the origin of the name Amazon. Adonis is "man of the land of Ea." Acheron or Apseron is "land of the burning" or "Land whence fire arises," i.e. the present Baku oil district.
4. The religion of the Aryans was derived from the Apseron district.
5. The religion of the pre-Mosaic Ibri (Hebrews), was derived from the mid Caucasus valley, i.e. Iberia or eastern Eadon.

6. The religion of Crete was from the same source as 1, with additions from a district just north of source 3. These additions were perhaps of a civil rather than a religious character.

It was further found that source 3 may have been originally in the eastern portion of the region given.

7. IDENTITY OF GREEK AND SEMITIC MYTHS

e. Origin of myths. When the geographical misplacement referred to above was corrected, it was found that the Semitic and Greek myths of the origin of mankind referred to the same place and were in agreement at all substantial points. E.g.

1. Eadon of Greek mythology and Eden of Semitic are the same region, i.e. the west and middle Caucasus valley. The word means "Land of Ea," and the eastern part was later called the land of the Iberi or Ibri (Hebrews).

2. The Garden of the Hesperides and the Garden of Eden were in the same place, i.e. the eastern part of Eadon or Eden.

3. The dragon guarded tree of the Apples of Hesperides and the kirubi (flying serpent) guarded tree of Life were in the same place, i.e. a garden in the eastern portion of Eadon or Eden.

4. Both Greek and Hebrew traditions place a phenomena of fire to the east of Eden (i.e. in the Baku oil district); the Greek tradition flaming fields; the Hebrew tradition a sword of fire which turned every way.

The sacred fire of the early Aryan religion was there also.

5. Zeus, according to the Greek mythology (Smith, Classical Dict. art. Prometheus), "created men out of earth and water and caused the winds to breath life into them." in Eadon.

God, according to the Semitic tradition (Genesis, chap. 2, verse 7), "formed man out of the dust of the ground and breathed into his nostrils the breath of life, and man became a living soul," in Eden.

6. Both the Greek and Hebrew traditions place the institution of the rite of the sacrifice of animals in Eden, and both lay stress on the fat of the offering.

7. The Greek tradition in regard to Prometheus and the Hebrew tradition in regard to Cain are similar in many respects. E.g.

Prometheus incurs the displeasure of Zeus, and Cain that of God, on account of the nature of their sacrifices.

Both are exiled to the same place, to the east of Eden (i.e. the Baku oil district).

Both are the originators of metal working and other useful arts for which fire is necessary.

f. The place names of the district are of such character that I think anyone who has done much work in this line will feel, as I feel, that in the Caucasus isthmus we are working in a district where Aryan and Semitic shade imperceptibly into one another.

g. An origin in the Caucasus isthmus would explain Mommsen's observation (History of Rome, chap. 3) that the two branches of the Indo-Germanic race have different names for the sea. The wild honey bee and the birch beech are also found in this district.

h. The known facts in regard to the dispersion of mankind are consistent with an origin in the Caucasus isthmus. See chapter on THE DISPERSION. It will be shown that the home of the negro race was Colchis, the western portion of the Caucasus valley. In connection with this rather unexpected discovery see Herodotus, II; 104. Also Pindar, Pyth. IV. Also Homer, Odyssey, I; 23. It will be noted that Homer antedates the expeditions of Sesostrius. For other evidence see the chapter referred to above.

i. An origin in the Caucasus isthmus is the only one in agreement with and consistent with all of the traditions of the Deluge and with all other old traditions having relation to the place of origin.

No way was apparent of avoiding the conclusion that the place of the origin of mankind was the Caucasus isthmus. This was the third major sequence.

8. MYTHS As HISTORY

A fourth sequence was that the old Semitic traditions must be regarded with respect, not as myths but as accurate historical relations. The Old Testament in particular (additional evidence of this will be found in the following chapters) appears to compare favorably as regards accuracy in all essential matters, with any history of which I have knowledge.

There are exceptions to many rules, but it is thought that a good working motto for the young archeologist will be, "Mythus solus, sunt mythi." i.e. "The only myth is that there are such things as myths."

9. DISTRIBUTION OF MANKIND AT TIME OF DELUGE

It was found possible, from these and other traditions, and from known facts, to obtain what is believed to be a substantially accurate and complete knowledge of the distribution of mankind before the Deluge. Briefly (the data and conclusions are given in detail in the chapter on THE DISPERSION), man occupied the Caucasus valley, what is now the south shore of the Caspian, the Caucasus isthmus between the Caucasus mountains and the line of the Manytsch lakes, and the shores of the Black Sea, with possibly a few settlements in the Aegean.

As was pointed out to Solon in Egypt, in droughts the shepherds and herdsmen perish, in inundations the cities are destroyed. A seven years' drought during which all springs were dried up would have brought the surviving inland dwellers down to the river bottoms and the coast. The subsequent tidal wave and river bores of the Deluge must have substantially wiped out mankind; there can have been very few survivors.

Though simplified, the problem was by no means an easy one, for:

- a. The main dispersions took place from a region which has not been archeologically explored.
- b. In the earlier stages of the dispersion the differences between the dispersing races are not so well marked as later.
- c. There were in some cases difficulties due to interpenetration. As if, e.g. a number of Germans, living in the United States were to form a settlement in the Philippines and the Philippines later became a part of the Japanese empire.
- d. Races which had reformed their theology frequently relapsed to a particular element of the primitive type.

On the other hand it was made more easy by the fact that the dispersion proceeded less rapidly at first. And most of all by the fact that I had at my disposal the results of the archeological investigations carried out with modern scientific methods in Egypt and Babylonia by men having a very special knowledge of their subject. I am especially indebted to Dr. Clay's work (*Amurru*, and *The Home of the Amorites*) which has shown that the old Babylonian traditions came from a Semitic source; progress in this portion of the problem was halted for some time because this was required by my solution, but until the publication of Dr. Clay's papers the weight of evidence was decidedly against it.

The principal methods used were:

1. Triple place names. To illustrate: If the name "Boston" is found in the U. S. as the name of a city, it may be an Indian word, and a pure coincidence that there is an English city of the same name, and of older foundation. When we find that both cities have a "Lynn" near them on the coast, the probability that both are Indian names is not great, but there is a possibility. But when we also find that both cities have a "Cambridge" inland the probability of a triple coincidence is so small that we may be fairly sure that the founders of Boston in the U. S. were of English descent. By this method identification is made a matter of mathematical probability and it is possible to express the certainty of the identification as a numeric by means of correlation formulae, but this is only useful in double place names as the correlation factor is so high with triple names that it approaches a certainty.

Single names are useful but require careful investigation, for:

a. There are the changes in form in transmission and with time. The laws of these transformations are well known, the result of the work of philologists.

E.g. Haburi may become Khaburi, Khuburi, Huburu, Hyperi, Heb'ri, Hib'ri, Iberi, Tiberi, Tiburi, Tib'li, Tif'li, Habiri, Haburi, Abari, Arberi, Arbeni, Armeni, Ormeni.

b. Compliance with the rules is not sufficient, the history of the word and the route by which it came must be investigated, e.g. one might think that the name of the river Araxes was derived from the Sanscrit "rasa" unless one knew that Sanscrit was a comparatively modern language and that the river flowed through a region settled at a very early date. The name is found in that form in early Greek literature, and one's suspicions would be aroused by finding that there was a river Araxes in Greece and further search would show that the Caucasian River received its name from the leader of a Greek expedition on account of its resemblance to the Greek river Araxes. (Strabo, XI; 14; 13.) Application of the triple place name method shows that the original name of the river was "Aragh" or "Araghw" and was probably connected with a pre-Sanscrit root "Ur-ab," "Erib."

Note. Zenophon's mistake in calling the Habur the Araxes was probably due to the fact that the upper portion of the Araxes was known as the Abar. Times Atlas, 71; H; 6. Alterations of this character are frequent. Bosporos and Bursa are instances. Bosporos is the Thracian form of Phosphoros (Wecklein) "Light bearing." The original Phosphoros Straits, at the entrance to the Sea of Azov, had Pillars of Hercules, i.e. Phoenician lighthouses, but showing red and yellow instead of red and green. See Herodotus, 2;44. Bursa, as has been shown by Smith, did not derive its name from Dido's trickery, but was the Phoenician word for "citadel."

Strabo says, Book XI; 11; 5; "Aristobulus calls the river which runs through Sogdonia, Polytimetus, a name imposed by the Macedonians, as they imposed many others, some of which were altogether new, others were deflections (paranomasian) from the native names." The Greeks were not the only offenders; the Semetic nations were frequently guilty of these geographic puns.

There is also one instance of a wholesale transference of names to points in the Far East, made to flatter the vanity of Alexander the Great. This fortunately only affected regions east of the Persian Gulf, and the Greek origin of the names is very obvious.

c. Much dependence cannot be placed upon the vowels, or whether they are long or short. E.g. in the Septuagint, a translation made by Greek scholars of repute and with accuracy as a prime objective, the name of the well known city Samaria appears in four forms in different codices and in different forms in the same codex; Sameron, Semeron, Somoron, Saemeron; in Hebrew it is Shomeron, and it was named after Shemer. The River Habur appears as Chaboras and Aborrhas; we have Ebura, Ebura and Ebora; and Iberus becomes Ebro. Nevertheless the vowels are important guides and warnings.

d. The laws of transformation are not given quite fully by the rules. Herman transforms into German, and Hades into Gades, but aside from the transformations being different in Aryan and Semitic, they also depend upon the relation of other consonants and vowels. Since 1912 I have had an opportunity of studying this subject in connection with work on sound, and with the assistance of Mr. Bennett and Dr. White, of the New England Conservatory of Music, the latter of whom taught Helen Keller to talk. The transformations appear to depend fundamentally upon certain peculiarities of the vocal organs, and the principal results will be found in the chapter on PLACE NAMES.

2. Physical characteristics, customs, dress; especially fire customs.
3. Religious rites; especially those of the women.
4. The natural geographic route of extension, taking into account the character and customs of the people.
5. The traditions of the place of origin.
6. The locality considered to have been the place from which the religion was derived.
7. The tradition of the relationship between races.
8. Causes of migration.
9. Personal names.
10. Names of deities.
11. Names of plants, animals, etc.
12. Results of archeological work.
13. Language.
14. Alliances in war.
15. Tools, weapons, ships.

10. DISPERSION OF MANKIND BEFORE DELUGE

The results are:

1. The origin of mankind was just north of the Caucasus range, in the upper Terek valley, near Grosnyi, the centre of the present Baku oil district. See chapter on PHYSICAL CHARACTERISTICS OF THE CAUCASUS ISTHMUS AND THEIR INFLUENCE ON PRIMITIVE THEOLOGY AND SCIENCE.

2. No evidence has been found that mankind were called by any specific name before they began to extend.
3. The first extension was south and east to the uplands of the Caucasus mountains.
4. The low country then was called Ur-on and its inhabitants Ur-ab or Ab-ur.
5. The mountainous district was called Al-on and its inhabitants Al-ab or Ab-al.
6. Ur means "fire" or "light." Al means "high" or "height." On means "place." Ab means "out of" or "from."
 - a. There are indications that all initial vowels were originally pronounced "explosively," i.e. as if preceded by a guttural sound like h or kh. Later this was softened out in most languages but the Etruscans appear to have brought it back in an affectation without quite understanding how it should be used.
 - b. These names survive in the Caucasus isthmus, e.g. the river Urup and peninsula Apscheron; the river Alontas and town Asslandus; the Iron (Iran), Kabardian and Alan tribes; Georgia (Khuroche) and Albania; the Abaran and Tiberda, Alisan and Alizon; Tereck and Tartar, etc. And in such names as Uranus, Elysium (Alazium), Helios, Iberia, Hyperia, Acheron, Europe, Atlantic, Tartarus, Aragon, Ashur, Turon, Alps, Sideros, Chalybs, Tiber, Iberus, Habur, Abarim, Hibri, Aryan.
7. The second extension was through the Arabus or Dariel pass into the middle and eastern part of the Caucasus valley. The Aloni do not seem to have taken part in this, only the Aburi.
8. These colonizers retained the parent name, Aburi or Haburi. The Greeks later called those of the middle valley the Iberi and those of the eastern valley the Hypiberi (Hyperborei), analogous to the term Hypachaeans. (Herodotus, 7; 91.)
9. The next, and to some extent contemporary extension was northwest along the slopes of the Caucasus and down the rivers later known as the Tiberda, Urup and Oceanus, Hypanis or Kuban, to the mouth of the Kuban at the entrance to the Sea of Azov. This was by the Uron and Alon people.
 The Alon people moved into the triangle of which the Kuban and Alontas or Terek formed the south side, the line of the Manysch lakes a second, and the shore of the Azov the third. The territory was known as Alond or Alont. The final consonant was not, I believe, inflexional. It may mean "set" or "belonging together with."
10. Those remaining in the place of origin, i.e. the land between and almost encircled by the present Terek and Sunsha were now called Ur-Al and later Ur-Ur, or Tur-Tur, a reduplication of the final consonant which became a feature of the Sumerian language. Other instances are found at the close of this period. It may have originated as a

distinction between different parts of the same race, i.e. between the Ur who had moved, the Aed-ur and those who remained, the Ur-ur.

11. Those dwelling to the east of Tur-Tur or Alont, i.e. in the present peninsula of Apscheron, Ashuron, or Alazon, were called Aps-ur, Ash-ur or Al-ups. The names survived in Apscheron, Acheron, Ashirta, Ashur, Assyria, Apharsath, Hesperus, Star, Alazon, Alypes, Chalybs, Elysium, Acheruntici libri, Acheruns, Asii, Asia.

12. The word Ash originally meant "up out of," and then "east," as that was the place where the sun came up out of. Later it meant wood, especially a kind of white poplar which grew in the Acheron valley. Aps meant the east.

13. The word Aed or Aet was applied to the west coast and those dwelling there. We have Aedon, Aeturon, Aetalon, Haedon.

These survived in Eden, Aethurea, Atlas, Atlantic, Hades (Aidoneus), Adonis, Aethiopia (Aeti-ope), ether. The fact that Aethurea and Aetalon suggest Etruria and Italy has of course been noted, but mere philological identities do not count in work in this field; there must be positive and definite historical or other facts; the history of the words Etruria and Italy is not sufficiently known.

14. The word Aed or Aet meant the sea, but not in the same way as the word ocean. Ocean was the "river place" (oche-on; I know philologists have given a different derivation but I think this will stand), the home of the tribe of rivers. But aed or aet meant what was there when you went into a dark cave; it was the black void; it was the sea in that sense and it carried with it the idea of darkness or blackness. The Black sea may possibly owe its name to a revival of the old name, but this is merely a surmise, I have not investigated and possibly it is too late to ascertain.

15. During the next expansion period both Al and Ur became sea faring nations. The Ur had the west end of the Caucasus valley, which Mithridates later found to be such a splendid place for ship-building, and the Al had the east end, almost equally good.

The Ur took the entire Black sea coast except the north, and the Aegean as far as Rhodes. Incidentally the story of the Telchines (Chalybs), that they settled Rhodes because they were afraid their own country would be deluged, confirms the impression derived from the Semitic traditions that the Deluge did not come without warning; and the specific statement of the Egyptian-Phoenician traditions that there had been several previous minor inundations.

The Al took the north shore of the Black Sea and the sea of Azov and the Crimea, placing the Pillars of Hercules at the straits. Also they took the southwest and south shores of what is now the Caspian Sea, but was then very much larger, and the Ocean of Atlantis. It will be noted that while there are numerous evidences on the Caspian Sea of this extension, e.g. the river Alontas, town Asslandus, etc., there are comparatively few on the Black Sea.

During this period the Al were called Alani or Atlanti (Aloni; Aetaloni), and the Ur were called Meropes or Europes (Ur-ope).

Ope was a variant of Oche, river. As was natural with a people with extensive irrigation works the word took on later a side meaning, "the thing that makes things grow," hence "fertility." Oche originally meant "spring" and ope "rain."

16. For the theology and science of this period see chapter 2.

II. SURVIVORS OF, AND DISPERSION AFTER, DELUGE

17. Extension was then interrupted by the Deluge. The following survived

a. Abur. (Haburi, Iberi, Hibri.) Noah and his family, from the east Caucasus valley; after the Deluge; from the Artaxatan or Karajas plain in the mountains of Ararat. (Ararat was a district, not a mountain, see Genesis 8. 4.) Semitic tradition. This was the Kir of Amos. Also other survivors in Armenia.

b. Aetur. On south coast of Black Sea. Possibly the Phrygian tradition.

c. Aea and Aetiope. In Colchis (Chalchis, west Caucasus valley), and possibly Rhodes. The Phoenician-Egyptian tradition, and the Telchines-Meropes tradition.

. Aetal. (Cimmerii, Ambrones.) The Crimea. The Cimmerian tradition.

e. Al, Alab, Alaps, Ur. and Apsur. In the peninsula of Apscheron and the Caucasus range.

f. Al, Alaps, Ur, Apsur. On the south and southwest shore of what is now the Caspian. The tradition will, I believe, be found when the region south of the Caspian is investigated archeologically.

18. So far as can be ascertained no other surviving groups greatly influenced the subsequent stages of dispersion. These appear to have been, see MAP A.

a. Of the Aetal north and west to the shores of the Baltic and Italy.

b. Of the Al east along the south shore of the ocean of Atlantis.

c. Of the Alaps, Apsur and Ur up the Araxes to the Urmia valley; thence of the Alaps and Apsur down the Little Zab to the Tigris and thence to Babylon; the-region above the junction of Little Zab and Tigris was settled later from Ashuron. The Alaps and Apsur kept together, but the Alaps were the Chaldeans, the astronomers, metal workers, etc., while the Apsur were the farmers. The Ur and Abur spread from the Urmia valley to the southeast.

d. Of the Abur of Armenia west to the Bosphorus, thence across Thrace to northern Italy, southern France and Spain.

The descendants of Noah spread down the Euphrates valley to the neighborhood of Aleppo, and there divided. One branch went south to Damascus (there is some evidence that a branch of the Euphrates once flowed past Damascus into the Jordan Valley, possibly past Palmyra) and thence to Arabia. The other branch went southeast to Babylon and there encountered those descendants of the survivors who had come from the Urmia valley. The Tower of Babel was probably built for astronomical purposes, to settle disputes connected with the time for opening the irrigating canals of the interconnecting canal systems of the Tigris and Euphrates. Such towers had been in use in the Caucasus valley.

e. The Aea and Aetiope for a long time were merely traders, though they settled some islands. They traded in the Black and Aegean seas, along the east coast of the Mediterranean, with the natives of Syria, and sailed into the Red Sea (the Nile had not then formed the Isthmus of Suez), and across thence, since Arabia was then completely or substantially an island, to the head of the Persian or Keph gulf and the island of Kephtor, where they traded with the settlers there, and founded cities in the Persian gulf, called Tyre and Sidon. They also had a settlement in the gulf of Akaba, and later went across from Leucos and settled Thebes.

When the water route across north Arabia began to dry up and the Suez straits began to silt up they moved their principal stations to the eastern Mediterranean, and founded the cities of Sidon and Tyre there.

12. ABURI

To those who may be interested in checking up the work I would say that a little time may be saved by noting that though the word Abur originally meant that branch of the Ur who settled in the middle and east Caucasus valley, it soon came to be used of all settlers there, including those on the Alizon (Alaps, Chalybs) and on the south slopes of the Apscheron (Apsur, Ashur, eres acher, Arzar, Azir) and the whole district was called Aburon (Iberia).

So when Abur are met one must go further and ascertain if they were from the original Abur, or later settlers in the valley. A list of the old place names of Spain reads like the index to a guide book of the true Abur Caucasus district and the Spanish Iberians observed the archetype of the Mosaic Passover (Strabo, 3; 4;16; "They sacrifice to a nameless god, every full moon, at night, before their doors.") and though not Semites they were true Abur. But though the Albanians were originally called Iberians (Shkyiperians or Arberians by the Albanians of today), when we go further we find that they were Al from the Iberian valley of the Caucasus, from the mountain slopes.

Again, in Susiana we have the Khuber, but find that they were neither Abur nor Al, but Apsur from the east Caucasus valley of Abur or Iberia.

But once attention is called to this it ceases to present any difficulty. And on the other hand the problem is very much simplified by the fact that for at least three and probably six thousand years after the Deluge there was no migration north of the Caspian to or from the east, for the reason that the whole province of what is now Tobolsk was absolutely impassable, both winter and summer; a vast morass extending for approximately 1,000 miles. All migration east and west had therefore to pass by the south end of the Caucasus, and is easily followed and determined.

13. HITTITES (SUTU, SEUTHES)

A more detailed account of these movements and of some important subsequent and of some interesting minor movements is given in the chapter On THE DISPERSION. E.g. it appears that the Hittites were Abur and came from Armenia, down the Euphrates valley to the territory where the Euphrates turns east, thence they went south to Arabia. There they were known as the Sutu. Later they left Arabia and went north and west, possibly on account of the drying up of northern Arabia, and were known as the Hyksos and Hittites. They were finally driven back to Armenian territory, and went from there round the east end of the Caucasus range to the north shore of the Black Sea, where they were known as Scythians.

14. MONGOLS

The so-called Mongoloid characteristics are not, I think, indicative of any fundamental race difference. They are found occasionally in Indo-Europeans as the result of deficiency of certain glands. I think the Mongols were A1 of 18 b, and think that I have noted disappearance of Mongoloid characteristics and reversion to Indo-European type.

15. NEGRO

No definite evidence has been found to fix the origin of the Negro. They first appear in the west end of the Caucasus valley, the western portion of Aedon. This western portion of Aedon was the first place to be called Aethiopia. Later Phoenicia received the name and still later the country south of Egypt.

The negroes of the west Caucasus valley were not wine colored or merely dark. They were black, and had woolly hair. They were not imported by Sesostriis, for aside from the fact that Sesostriis was gathering together all the laborers he could get for his works in Egypt, they were there a thousand years before the time of Sesostriis. They are found in connection with the Phoenicians, or Khain (Khæon), and may have been brought by the Phoenicians from the Red Sea. There are some things yet to be discovered about the human capillary system which may explain the negro, as a "sport" which may have originated in the Caucasus, but the evidence at present is in favor of a separate origin.

This occurrence in the Caucasus and in Egypt was what Homer meant when he spoke of "the Aethiopians, furthest sundered of mankind," a statement which has puzzled many Isomeric commentators.

16. CAUCASUS RACES

The dispersion of groups of mankind called by different names has been traced. This does not mean that there were so many distinct races. Two distinct races have been definitely established, i.e. a white race, with light hair and eyes, or with dark hair and eyes, first found in the northern part of the Caucasus isthmus, and which may be called the North Caucasus race; and a black race, with woolly hair and dark eyes, in the southwest portion of the isthmus, which may be called the Southwest Caucasus race. In the southeast portion of the isthmus are found the Semites, and there are some indications that they were derived from admixture of the north and southwest races. Provisionally they may be called the Southeast Caucasus race.

17. SEMITES

The Semites have been classed with the Nordic race (see Wells, Outline of History, p. 82), but this is certainly a mistake. The Semites are either an absolutely distinct third race or they are an admixture of north and southwest races. There are fundamental moral characteristics which are just as racially distinctive as physical characteristics, and one of these is that impersonal sense of right and wrong which was once called chivalry. This is strongly marked in the Nordic races, i.e. in the ancient Greeks, the Norsemen, the English and the Japanese. Even without such evidence as the identity of the Thracian story of the goddess Benthe and her cave with that of the Japanese goddess Bende we would recognize, notwithstanding their darker physical characteristics, a strong North Caucasus element in the Japanese. No trace of this sense can be found in the history of the Semites or in their traditions. The Semite is personal; when Shechem the Hivite said to Jacob and his sons, "Ask me never so much dowry and gift and I will give according as ye shall say unto me; but give me the damsel to wife," and his sons had persuaded the Hivites to become circumcised, and Simeon and Levi had butchered them all while helpless, Jacob bitterly reproached the murderers: "Ye have troubled me to make me stink among the inhabitants of the land, and I, being few in number, they will gather themselves against me and smite me, and I shall be destroyed." (Genesis 34.) But there is no sense of moral turpitude, and it should be made clear to children who may read that historically valuable book that in the Pentateuch the word sin means an act which has caused or will cause a financial or other loss to the person committing it. The strongest proof of the deity of Christ is the unsemitic character of his teaching (compare his recorded utterances with that of Jacob, above, and of other Old Testament characters). This ineradicable personal attitude, so valuable to the individual accumulator, so destructive to the community, clearly separates the Armenian, Hebrew and other Semitic races from the North Caucasus type. See Strabo, III; 4; 5.

18. UR-AL

One difficulty met with in tracing the North Caucasus race is that the Ur and Al combined politically and theologically. The two gods, Ur and Al became a twin god, Ur-Al (KhurKhal), and Tartarus was known as Ur-alu. It is possible that the Ur may have been the dark North Caucasus type, and the Al the light type, but there is not sufficient evidence to separate them into distinct races.

19. CONCLUSION

I have, given above what may be called the main movements and it is believed that the account given is substantially accurate. It is of course not beyond criticism but its correction I must leave to the hands of men much better qualified in their particular lines than I am; it will, it is hoped, be a good working basis.

III

THE PHYSICAL CHARACTERISTICS OF THE CAUCASUS ISTHMUS and their INFLUENCE ON PRIMITIVE THEOLOGY AND SCIENCE

The physical characteristics of that isthmus where mankind had its origin are sufficiently remarkable in themselves; and they are known, as one might know the individual elements which go to make up Niagara; so many rocks, so many trees, so much water. It is when we see them as a whole that they appear as a stage setting for the entrance of man into this world more wonderful than has ever been seen in a dream. What follows will best be read with the map and with the reference books specified, chosen as being authoritative and easily accessible.

The isthmus runs approximately north and south and lies between the Black Sea, on the west, and the Caspian Sea, on the east.

The Caspian Sea was formerly much larger than now and extended, as the Ocean of Atlantis, 1,800 miles to the east, to western Mongolia. Its present level is 80 feet lower than then; the former shore, known by the shell deposits, is indicated by a dotted line; from which it will be seen that there has been no substantial change in the isthmus except that the small area of low ground to the right of the line was then under water and the sea washed the base of the peninsula of Apscheron.

1. THE BARRIER

Across the middle of the isthmus, in a straight line, approximately east and west, and running into the sea on both sides are the mountains, the Caucasus range.

These are the highest mountains in Europe, Mt. Elbruz being more than half a mile higher than Mt. Blanc. They are not a disconnected series of peaks but a continuous range, the greater part of its length above the limits of perpetual snow. (Ency. Brit. art. Caucasus.) Glaciers are practically continuous over a great part of the range but do not descend below 7,000 feet on the south and 5,700 feet on the north.

To the most expert of modern mountaineers and with the best modern equipment the passage of this range would be a difficult and dangerous feat; I cannot find that it has been done. To primitive man it was impossible. Nor could he go round the ends. of the

range because as will be seen by using the map scale both ends stick out into the sea in such a way that, whether he went by east or by west, he must travel approximately 250 miles along a harborless coast with spur ranges projecting into the sea every few miles, their sides covered with dense forest. Thousands of years later a powerful king of that country, Mithridates, fleeing for his life, escaped that way because he knew his enemies could not follow him, but "he proceeded with great difficulty, frequently embarking in vessels." (Strabo; 11; 2; 13) ; Mithridates had boats, he knew where he was going, yet he took months. Primitive man had no boats, he did not know if he would arrive at any place which would support life; he would have been afraid and have turned back before he had struggled on for a single month.

2. NORTHERN ENCLOSURE

So until he discovered that wonderful door which was later to be closed by iron gates, first by Aidoneus and again after ages by Alexander, man could not pass from the north side of the isthmus to the south. When the last great glaciers (see map of fourth glacial age, Wells, Outline of History), slowly groaned their way south they pocketed what life was in front of them, of that region, into the north end of the isthmus. It could not escape south. There, in the centre of that pocket, hard up against the mountain range and opposite the hidden door, were the Ever Burning fields and the burning river Pyriphlegethon. Now, as Grosyni, it is the centre of the Baku oil district; two thousand years ago if one poked a stick into the ground oil would collect. And nearby was the wonderful Mountain of Iron and Brass, Thammuzeira, which the Chalybes under their queen Ashirta, worked and which became the sacred place of a great religion.

3. PASS OF EREBUS (ARABUS, ERIB)

Here man had his origin, on the eyot, almost encircled by the Terek and Sunsha, of Tartarus, and had developed to a high stage of civilization before he discovered that the heights of perpetual snow south of him were not the end of his world in that direction, as the great glaciers were to the north. Had the door been a mountain pass, like the Simplon or St. Bernard, it would not have been long before it was found; but it was not, it was of an extraordinary character.

To answer thought of possible exaggeration of its peculiar structure I will quote from that conservative authority, the Encyclopedia Britannica, article Caucasus.

"There exists, in fact, but one natural pass across the great chain of the Caucasus. This route ascends the valley of the Terek from Vladikafkaz as far as Kobi (a distance of about 40 miles), where it quits the valley and is carried over the lofty crest or ridge known as the Krestowaja Gora, an elevation of nearly 8,000 feet, from whence it descends to Mleti in the valley of the Aragus and follows the course of that stream nearly to Tiflis. It is commonly known as the Pass of Dariel from the remarkable gorge of that name through which it is carried between Lars and Kasbek, a defile of the grandest and most impressive character. Previous to the formation of the present road *this deep and narrow gorge, affording just passage for the torrent, while the mountains rise on each side abruptly to a height of at least 5,000 feet above the level of the Terek*, must have presented almost

insuperable difficulties to the passage of traffic along this route. Hence it was known and celebrated from the earliest times and is mentioned under the name of the Caucasian Gates by Pliny, who describes them as actually closed by a fortified gate, a measure which might have been easily adopted."

It was very dark. The Caucasus range is in latitude 43 and runs east and west, and the cleft is narrow and 5,000 feet deep and winding, so even at noon of midsummer a way must be picked along the edges of the roaring icy torrent in the dark.

It was Erebus, the region of gloom of the Greek mysteries (from Arabus; see Aeschylus, Prom. Bd. line 420; now the Aragus, see quotation from Ency. Brit. above; originally it was Ur-ab, "from Ur"; hence erib, "entrance, exit").

4. THE DOOR (KUANTHURETRA)

The gates were at the northern entrance to the gorge. I am not sure that the statement made by Alexander's historians that he placed gates there is correct, though he may have instructed one of his lieutenants to do so. But thousands of years before Alexander's time Aidoneus, king of Aides (Aidon; Aedon) had placed iron gates there, and it was these that Hercules was said to have carried off, as Samson did the gates of Gaza. For Cerberus was not the seven headed hound or "thereutes" of Aides, but his seven fold door or "thureta" of dark blued steel, which he had placed between Ur and Abur. In B.C. 100 the gate was at the southern end. See Strabo, 11; 3; 5. "From the north there is a difficult ascent for three days, and then a narrow road by the side of the river Aragus, a journey of four days, which road admits only one person to pass at a time. The termination of the road is guarded by an impregnable gate."

5. SOUTHERN ENCLOSURE

The south end of the isthmus is overhung by the mountainous table land of Armenia, between which and the Caucasus range is a heavenly valley, divided into three parts by two small ranges running at right angles to the Caucasus range and buttressing it and the Armenian table land.

The middle third of the valley is therefore like a square four walled enclosure, and it is into this that the gate opens.

Two-thirds of the valley, the western and middle portions, were part of the kingdom of Ea, and were called Aedon by the Phoenicians and Eden by the Semites. The western half of Aedon was called Aethiopia by the Phoenicians and later Colchis by the Greeks. The eastern half of Aedon, the part enclosed on all four sides and into which the gate opened, was the "Paradeisos" or enclosed park of the Septuagint and the "Garden in the east of Eden" of the Semites.

The eastern third of the valley, through which portion the Alizon flowed, was called "Elysion" by the Greeks.

Aethiopia (Colchis; west Aedon) was inhabited by a negro race. The black race received its name from this district; it may have originated there or in the neighborhood. They were employed by the Phoenicians for ship building, and may have been brought there from some other region.

Iberia (eastern Aedon, Paradeisos) was inhabited by the Aburi or Haburi. This was the Greek name for the middle third of the valley.

Hypiberia (Hyperborea, Elysion) was where Aloni and Alapsoni (Alazoni) lived. Hypiberia was so named because it was beyond Iberia; compare Achaeans and Hypachaeans, Herodotus 7; 91. But the Greeks were always fond, as Strabo puts it (Strabo, 11; 11; 5) of making "deflections (paranomasia) from the native names" to give them a Greek meaning. I have referred to this in connection with the river Araxes. So they "deflected" Hypiberia into Hyperborea, i.e. "beyond the North wind" (Boreas).

This was not a bad paranomesis because the Caucasus range sheltered Hypiberia from the north wind, and as Boreas came from the north, Hypiberia was beyond his land, just as the Soudan, to the south of Egypt, is "huper Aiguptou." In early times the Greeks were well acquainted with the Hypiberians, who established the worship of their divinities in many of the Greek settlements, e.g. Delos, Eleusis; and who on a number of occasions sent offerings to the shrines they had founded and made pilgrimages to them (Herodotus, 4; 33-35). Even as late as 600 B.C. there were visitors to Greece from Hypiberia, e.g. Abaris of whom I shall tell later, who came by way of the south shore of the Black Sea. Then communication was cut off by wars and the early geographers were not able to locate it. They took Hyperboreas, 'beyond the North wind,' to mean beyond the North wind to the north instead of beyond the North wind to the south, and were confirmed in this opinion because they knew that some of the offerings of the Hypiberians to Delos had been passed along by the Scythians of the north shore of the Black Sea (this was at a time when the southern route was closed), see Herodotus, 4; 33. So the geographers looked for the Hypiberians to the north and did not find them and four or five centuries later decided that they must be mythical. But they were a very real and very wonderful people, from whom the Chaldaeans in Babylon and Pythagoras in Greece derived their knowledge of astronomy and other sciences, and the Greek priests their mysteries.

The great Caucasus range was, physically, a barrier between the peoples of the north and of the south portions of the isthmus. But it had another function, it was the Titanic curtain of a great world drama, the greatest of all, and the more remarkable in that the action was on both sides, there was but a single exit or entrance, and the actors on one side of the curtain were believed to be in hell, those on the other side in heaven.

6. EDEN (AEDON)

To tell this I must first complete the description of the stage. The Caucasus valley has been described by many travelers but for the present purpose, which is to present the facts without any possible suspicion of coloring so that others may have the opportunity to judge for themselves that the conclusions reached are right or wrong, it will be better to go to the Encyclopedia Britannica. That says:

"The Caucasus range, from its character as a great barrier extending across from sea to sea constitutes the limit between two climates which differ very widely from one another. The great steppes and plains of Russia on the north side of the chain are open to the cold winds of the north and partake to a great extent of the severity of a Russian winter; while the valleys on the southern side are sheltered by the vast mountain wall to the north of them and hence enjoy a climate more in accordance with their southerly latitude."

"The vegetation of the Caucasus is in general not materially different from that of the mountain chains of Central Europe. The extensive forests that clothe its flanks are composed entirely of the ordinary European trees, among which the oak, the beech, the elm and the alder are the most prevalent, but a peculiar character is imparted to them by the dense undergrowth of rhododendrons, azaleas, boxwood and laurels, as well as by the huge masses of ivy, clematis and wild vine, which attain a height and size wholly unlike anything to be seen in western Europe."

"Fruit trees of various kinds abound on the lower slopes of the hills, where the plum, the peach, the apple and pear are found wild as well as the walnut, which is grown extensively in the cultivated regions where it combines with the plane and the lime tree to form one of the chief ornaments of the landscape."

7. THE GARDEN OF EDEN

Of the central part of the valley (Paradeisos, Aburon, Iberia, East Aedon), the part enclosed on all four sides and into which the gate opens it says (article Georgia, vols. 10 and 26):

"The valley and declivities are fertile, producing maize, millet, barley, oats, rice, beans, lentils and wheat; also cotton, flax and hemp, now exported to Russia. The average produce of wine is at the rate of 230 gallons per acre. In the vineyards are the apple, pear and quince trees; other fruits include the pomegranate, peach, plum, almond, mulberry, pistachio, fig, cherry, walnut, hazel nut, medlar, melon and watermelon, raspberry, etc. In summer the banks of the streams are covered with beautiful wild flowers- the primrose in double form, the crocus of varied colors and snowdrops appearing early in March in the greatest profusion."

"Average temperature; year 55; January 32.5; July 77; annual rain fall 20 inches." The luxuriant pasturage is independent of the rain fall, which is quite insufficient, especially in the eastern portion where the rain fall is given as only 10 inches. For the explanation it will be best to quote Strabo, who was born nearby and whose grand-uncle was governor of Colchis.

"The plain (Themiscyra, where he was born) is partly washed by the sea and partly situated at the foot of a mountainous country which is well wooded and intersected with rivers which have their source among the mountains. It is *therefore well watered with dews* and is constantly covered with herbage and is capable of affording food to herds of cattle as well as horses. The largest crops there consist of millets; *they never fail, for the*

supply of water" (from the dews) "more than counteracts the effect of all drought; these people therefore never on any occasion experience a famine."

"The country at the foot of the mountains produces so large an autumnal crop of spontaneously grown wild fruits, of the vine, the pear, the apple and hazel that *in all seasons of the year* persons who go out into the woods to cut timber gather them in large quantities; the fruit is found either yet hanging upon the trees or lying beneath a deep covering of leaves thickly strewn upon the ground. Wild animals of all kinds which resort here on account of the abundance of food, are frequently hunted." (Strabo; 12; 3; 15. The small rain fall is hence an advantage, as the fruits are preserved all the year round under the covering of leaves and do not rot.)

That the climate of the central enclosed portion of the Caucasus valley (East Aedon, Paradeisos, Aburon, Iberia), and therefore that of the rest of the valley, had not changed in Strabo 's time from what it was when man first appeared there is shown by the Semitic tradition:

"For the Lord God had not caused it to rain upon the earth, and there was not a man to till the ground.

"But there went up a mist from the earth and watered the whole face of the ground."
Genesis; 2; 5-6.

8. THE RIVERS OF EDEN

Incidentally it may be noted that, as stated in Genesis 2; 10; the river which waters East Aedon, i.e. the Kur, does not rise within it, but flows into it from the west, from West Aedon, and after flowing through it "passes," to quote Strabo, 11; 3 ; 2, " through a narrow channel into Albania" (Hypiberia, Elysion) and there divides into a number of channels, in the Adshinour Steppe or Plain of Adshinour, near the town of Chaldan, and the left hand branch flows "in front of" Apsur, or Asshur. I have not investigated these particular coincidences for the reason that from other data I know that this alluvial district was the prototype of the plain of Shinar and Chaldea, and any attempt to trace the different passes of the Kur would be a failure, as they change number and position as the delta grows. Strabo says, 11; 4; 2: that in his time there were said to be 12 such passes. Havilah cannot be identified by the gold, because the whole valley had gold. Strabo says, 11; 2; 19: "Some say they are called Iberians from the gold mines." (Note, he was confusing the Ghurochi or Urochi, whom the Greeks "deflected" into Georuchi, with the Iberi.) And "cush" may not have anything to do with I I black" but may be connected with Susa, i.e. Schuscha in Karabagh. A close identification of the branches of a delta after 10,000 years can hardly be considered as a scientific objective.

Also. it must be remembered that Ezra the scribe, the very learned archeologist and priest who gathered together the old Hebrew writings into the Book of the Law, the Pentateuch, was living in Babylonia and had been educated there. It is evidence of Ezra 's critical ability that nothing derived from a Babylonian source is incorporated in the Pentateuch. (Note: Clay has shown conclusively that the Babylonian Deluge tradition which parallels Genesis was derived from a Semitic source. See Clay, Hebrew Deluge Story. I have

found in Babylonian literature a second deluge tradition which came from Elam but has some suggestions of Phoenicia. But this is quite different from the Hebrew, though in no way contradictory, in fact corroborative. I have reasons for believing the Huburu of the Babylonian Deluge tradition to be the Haburi mentioned above, but dare not make the identification positive until I have had opportunity of submitting it to the criticism of competent Orientalists.) It would be only natural that seeing the word Phrat and having been taught by the Babylonians that the Garden of Eden was at the source of the Euphrates, he should identify that Phrat with the Phrat on which Babylon-was, even if this involved a slight forcing of the other identifications. Excavations may some day disclose an earlier text. The curse, "amel must amal," is significant.

9. ETHIOPIA (AETI-OPE)

Of Ethiopia (West Aedon, Colchis) the authority we are quoting says: "Its climate is extremely hot and the annual rainfall very considerable, reaching 80 inches at Batum." The very hot and very moist climate in which the negro is supposed to have originated is therefore found in this district. "Magnificent forests clothe the mountain sides and extend quite to the sea. It is characterized by a luxuriance of vegetation to which no parallel can be found in Europe."

Jason's task, of ploughing with the oxen of King Aeetes is probably to be explained by the fact that "These vast forests of the western range still afford shelter to the aurochs or European bison, which now exists here alone in a truly wild state." There would be a difficulty in ploughing with them; still more if they were the true aurochs.

Strabo, 11; 11; 17 says "It furnishes all materials for ship building in great plenty and they are conveyed down by its rivers. It supplies flax, hemp, wag and pitch in great abundance. Its linen manufacture is celebrated and was exported to foreign parts."

Herodotus, 2; 104 says: "There can be no doubt that the Colchians are an Egyptian race. They are black skinned and have woolly hair, which certainly amounts to but little, since several other nations are so too; but further and more especially, the Colchians, the Egyptians and the Ethiopians" (those south of Egypt) "are the only nations who have practised circumcision from the earliest times. The Phoenicians and Syrians of Palestine themselves confess that they learnt the custom from the Egyptians." (Compare Genesis 12;10-16, 16; 1, 17; 10, Exodus 4; 24-26.) "I will add a further proof to the identity of the Egyptians and the Colchians. The two nations weave their linen in exactly the same way, and this is a *way entirely unknown to the rest of the world*. They also in their whole mode of life *and in their language* resemble one another." I have referred above to Homer's statement that the Aethiopians were divided into two parts, at opposite ends of the world, one at Colchis the other at Egypt. (Odyssey, 1; 23.)

Pindar speaks of the "dark faced Colchians," Pyth. IV. Homer says that the Aethiopians were on the banks of the river Oceanus (Iliad I; 423), which as we shall see was just above Colchis. Hesiod, in a fragment, says "He saw the Aethiopians, and the Iberians and the Scythians, milkers of mares." Euripides, in a fragment of his Phaethon, calls the Colchians the "swarthy neighbors" of the Meropes, who lived just north of the Caucasus

range. Egypt was originally called Aetia (or Aeton) and the Nile, Siris. (Ciris is the longest river in the Caucasus valley.) I have traced the negro race in Colchis back to about 2,500 B.C. Still, this does not prove that they originated there. On the other hand, it is quite possible, and agrees with their distribution.

10. HYPERBOREA (HYPIBEREA)

Of the third and eastern portion of the Caucasus valley, Hypiberia (Hyperborea, Elysion), the climate is similar to that of the central portion, but less rain fall, i.e. only 10 inches, but with the same heavy dews and luxuriant herbage.

To speak first of Hyperborea; before it was lost, as I have told above, it was well known to be in the Caucasus. "Abaris the Hyperborean," of whom Herodotus and others tell, was said to have come from the country about the Caucasus. Another Abaris is called "Abaris Caucasius" by Ovid. The Greeks used to call strangers by the name of their country, and Abaris is a well known variant of Iberis. See river and town Abaran in Iberia, and Strabo, 11; 14; 16. Also Aeschylus, *Prom. Bound.* lines 420 et seq. "And the flower of Abarias in arms, who hold the high cragged citadel hard by Caucasus, and the dwellers in the land of Colchis; the maidens fearless in fight and the Scythians." (Smyth's translation and introduction.)

Abaris came by way of the south shore of the Black Sea. The offerings of the Hyperboreans to Delos were handed on by the tribes on the north shore of the Black Sea. All the visits of the mythological heroes to the Hyperboreans were by way of the shores of the Black Sea. The Amazons were neighbors of the Hyperboreans, and the Amazons were in the Caucasus. The names of the known Hyperboreans, Abaris, Zamlochis, Opis, etc., were all Iberian. The religion of the Hypibereans was the same as that of the Hyperboreans see below. The graves of four Hyperborean pilgrims were still to be seen in Delos in Herodotus's day. The descriptions of the Hyperboreans and their land, Hyperborea, agree exactly with the description of Hypiberea given by Strabo, 11; 4; 3:

"Perhaps such a race of people have no use for the sea, for they do not make a proper use even of the land, which produces every kind of fruit, even the most delicate, 'and every kind of plant and evergreen.' (Note that Pindar says, *Olymp. III*, that the wild olive tree from which the wreaths for the Olympian Games were made, came from Hyperborea.) "It is not cultivated with the least care; but all that is excellent grows without sowing and without ploughing, according to the accounts of persons who have accompanied armies there" (Strabo's great uncle was governor of Colchis).

"The whole plain is better watered than Babylon or Egypt, by rivers and streams, so that it always presents the appearance of herbage and it affords excellent pasture. The air here is better than in those countries. The vines remain always without digging around them, and are pruned every five years. The young trees bear fruit even the second year, but the full grown yield so much that a large quantity of it is left on the branches. The cattle" (kept for the milk only), 'both tame and wild, thrive well in this country. The men are distinguished for beauty of person and for size.' (Until recently the women of this district were prized above all others for the Turkish harems.) "They are simple in their dealings

and not fraudulent, for they do not in general use coined money. They are careless in regard to the other circumstances of life." Their chief deity was Apollo.

A cool and gentle air descended from the snowy mountain heights and flowed eastward to the delta; it is spoken of as very delightful; though it made the rainfall very low, 10 inches, this was more than made up for by the heavy dews and many rivers. Strabo's description of the Hypiberians may be compared with Smith's description of the Hyperboreans, article Hyperborei, Classical Dictionary:

"In the earliest Greek conception of the Hyperboreans they were a blessed people living beyond the North wind" (i.e. south of it, and sheltered from it) "and therefore not exposed to its cold blasts, in a land of perpetual sunshine, which produced abundant fruits, on which the people lived, abstaining from animal food. In innocence and peace, free from disease and toil and care they spent a long and happy life in the due and cheerful observance of the worship of Apollo, who visited their country soon after his birth. The Delian legend told of offerings sent to Apollo by the Hyperboreans, first by the hands of virgins named Arge and Opis (or Hecaege) and then by Laodice and Hyperoche, escorted by five men named Perpherees" (Herodotus gives this as equivalent to "theoroi," but I find that the word was "wronged" from "Pyr-pherees" ie. fire carriers, a title given to Prometheus and to the priests of Apollo who carried the sacred fire to new or extinct shrines), "and lastly, as their messengers did not return, they sent the offerings packed in wheat straw, and the sacred package was forwarded from people to people till it reached Delos."

(Note: It is significant that the relaying of the offerings can be traced back from Delos, tribe by tribe, to the Scythians on the north and the east shores of the Black Sea, north of the Caucasus range, but that Herodotus could find no tribe north or east of the Scythians who knew anything about it. See Herodotus, 4; 33. The Hyperboreans must therefore have been next the Scythians and on the south side of the Caucasus.)

11. ELYSION (ALYSION)

That part of Hypiberia which was watered by the Alizon and was nearer to the gate was the Elysion of the Greeks. The Elysian fields were the fields through which the Alizon flowed. Homer's description is, *Odyssey*, 4; lines 560 et seq.

The Elysian plain and the extremity of the earth, where auburn haired Rhadamanthus is; there in truth is the most easy life for men. There is no snow or storm or even rain, but always the ocean sends out the breeze of the west to blow cool on men."

(Note. Compare Strabo, 11; 5; 5. "Here they lay the scene of the tradition that Prometheus had been chained *in Caucasus at the extremity of the earth*, for the Caucasus mountains were the furthest places towards the east with which the people of those times were acquainted." It was the extremity of the earth because it was on the shore of the great ocean of Atlantis. Note also that Rhadamanthus is given the type of hair peculiar to the Al race.)

The following lines, Homer, Iliad, 2; 734; et seq. are suggestive: I `And of them that possessed Ormenios and the fountains of Hyperia, and possessed Asterion and the white crests of Titanos, of. These was Eurypylos leader, Euaimon's glorious son." (Aides, Alaporus, Alap-uros, Evaemon.)

Those reading Homer in this connection should note that not only Homer but also other early traditions use the word Aethiopia, when applied to the Caucasus valley to indicate, not Colchis alone, but the whole valley, including Hypiberea.

12. THE KABIRI AND PYTHAGORAS

The valley of the Alizon was the hidden home of a great secret society, called Kabiri (Aburi) by the Ur, and Dactyli (Achali) by the Al, which for thousands of years permeated the institutions of the ancient world and in more than one era attempted to entirely control them. The latest attempt was that with which the name of Pythagoras is associated, but of which Zamolchis was the actual head. The society originated on the north side of the Caucasus mountains but for some reason, possibly secrecy and freedom from disturbance by Scythian raids, removed to the Alizon valley, where they remained until about 600 B.C., after which they disappear. The so-called Pythagorean doctrines and most of his supposed scientific discoveries were the standardized instruction to the initiates of the society; his method of demonstrating vegetarianism by means of an athlete (Milo) who ate no meat, in which he anticipated Yale by some thousands of years, may have been original.

The Kabiri had much knowledge of numbers, of geometry, and of astronomy, but their great power was derived from their knowledge of technical secrets, the making of glass, of steel, of enamels, of reducing ores, etc. The most (so far as I know) important secret sign of the Kabiri, indicating that a brother member is prepared to render assistance, is hidden in Homer; and as we shall see later, Homer had knowledge of another initiate secret.

The society built temples and established mysteries, e.g. at Delos, Samothrace and Eleusis. One of these mysteries was a knowledge of the route by which Elysion was reached. It was this secret that Homer knew, and he describes the way right up to the gate. I feel that possibly some part of the great reverence in which Homer's writings were held was due to the fact that when Solon collected them communication with Hypiberia had been cut off and that the mystery of the way by which Elysion was reached had within a few generations begun to assume a religious significance analogous to and possibly influenced by the Egyptian Book of the Dead.

The Kabiri certainly maintained records, for we have the Acherontici libri, to which class possibly the books of Numa belonged. They had observatories of some kind, the prototypes of the ziggurat of Babylon, and as they gave the longitude to Babylonia we should be able to determine the observatory site; possibly Schemacha, opposite the gap of Marasy. If they did not destroy these records is there not a possibility, in view of the dryness of the climate, above referred to, that they might be revealed by excavations

conducted under proper scientific supervision, in the Alizon valley and on the slopes adjacent. If found they should go back to pre-Deluge times.

We must now go through the gate, for what we have seen so far is only half of the stage, and it is on the other half that the most poignant scene of the drama takes place.

13. THE KIRIBI

The way from Elysion to the gate, as will be seen from the map, is through that part of Eden which is enclosed by the four mountain ranges, the Garden of the Hesperides of the Greeks, the Garden of Eden of the Semites. Here was the dragon (kirubi) guarded tree with the golden apples which prolonged life. The two traditions supplement each other, we should never have known that the fruit of the tree of Life of the Semitic tradition was golden colored and like an apple if it had not been for the Greek tradition; and many people have thought that Ezekiel was wrong when he said the cherubim (kirubi) were like dragons, with four feet and four wings (see Ezekiel, chap. 1), but the Greek tradition says he was right, and he was. They are now found in the islands of the Malay Archipelago, but when the land to the west was covered with trees and the climate was not so dry, they migrated in immense swarms as far as Egypt and the Caucasus. They never got actually into Egypt, but died in the ravines leading to the Egyptian plain. Herodotus says he saw one valley filled with "their back bones and ribs in such numbers that it is impossible to describe." The Egyptians thought that they were killed by the ibis, but it was really due to the change in temperature and humidity, though the ibis may have been contributory by halting the migration. Herodotus describes them correctly as having membranous and not feathered wings and of different colors. The authorities say that the colors are very vivid, blue, red and yellow, and one naturalist says they look like immense butterflies, soaring through the air. One can hardly censure Eve for being attracted. But the ancients were extremely afraid of them. They were nearly three feet long and lived in trees, on the insects, and could soar from limb to limb or run with very great rapidity on the ground. Though they are truly lizards they look just like a snake, being very slender and with a long tail. Two of their so-called wings are rib extensions, and these are what are used for flying. "They fly very well," says a field naturalist of the American Museum of Natural History, who has lived in that district. The other two are merely extended pouches. Herodotus says that the Arabs did not dare to gather frank-incense until they had smoked them out of the trees with styrax, which shows they really feared them, for styrax is expensive. Strabo says (15; 1; 37) that they emitted drops of liquid which caused blood poisoning, but he had not personally investigated the subject as Herodotus had, and the authorities are agreed that they, the Agamidae, are harmless. On account of their beautiful appearance and remarkable structure they would be of interest if brought to this country by some of our Zoological Gardens.

Students of the Pentateuch will note that this clears up the problem of the meaning of the curse laid on the serpent. "Upon thy belly shalt thou go"; no punishment to a snake but to the kirib the loss of its beautiful wings and its legs.

Note. As there are some differences, though not material, in the descriptions given by naturalists of draco, the writer made numerous attempts to get in touch with some

scientifically trained and accurate observer who had personally studied draco Volans in the field. Through the kindness of Dr. G. K. Noble of the Department of Herpetology of the American Museum of Natural History, New York, this has finally been accomplished. The following extracts from Dr. Noble's letter of Sept. 7th, 1923, settle the doubtful points.

"A field man in this museum, Mr. H. C. Haven, is very familiar with Draco in the field. He tells me that Draco usually does not extend its front legs when flying, as shown by Gadow, and thus the rather widely extended hind limbs and body membrane give the appearance of four wings.

"It has recently been stated that Draco does not fly, but blows itself up into a balloon and drops from the trees. This our field man tells us is not true; that Draco flies very well. He tells me that the gular pouch or flap of Draco is not erected and that it does not blow itself up at all when flying. In flight the dracos look very much like butterflies for their bright reds and yellows give them a very gay appearance. .

"Mr. Haven tells me that 'most Malays claim Draco to be poisonous and consequently fear it.' It is of course quite innocuous, but it will open its month and make a fuss. In various tropical countries some lizards are feared even more than poisonous snakes. It is therefore not surprising that the Malays should fear Draco."

I have also ascertained that when draco is lying along the branches of the trees, catching insects, the gular pooches or flaps are spread out, and thus the four winged appearance is given at rest as well as when flying.

14. THE TREE OF LIFE

Of the tree of Life; we are able to fix this definitely now that we know the Greek and Semitic traditions relate to the same place and to the same object. It has fruit resembling an apple, the color of the fruit is golden (not coppery), it is one which would be picked out of others by Draco Agamidae; it was found in the Caucasus valley at that time; it was not found west of the Caucasus; it has very important medicinal and life prolonging properties.

There is one fruit only which fills this specification, and it does so completely, i.e. the Citrus Medica. Its fruit is like an apple, it is golden and not coppery, it would be picked out by Draco Agamidae (incidentally it came from the same place, i.e. India). It was known in Media from the earliest times and Media ran up to the lower Caucasus valley (the Araxes was the boundary between the two, see Herodotus, 4; 40). It was not known west of the Caucasus until a late date; the orange, lemon and citron are the three great vitamine bearing fruits, and as the orange and lemon came from India and were not known on the shores of the Mediterranean or Black Sea until about 1,000 A.D. its health giving properties in scurvy and other diseases must have seemed miraculous. I have found that the white inner rind and to some extent the juice of the orange and some other citrus fruits has a remarkable effect on badly healing and inflamed surfaces, and indications that the Citrus Medica has some element which acts beneficially on the intestinal tract and internal secretions. Investigation of the medicinal elements contained in the Citrus Medica, is being made, but merely to clean up the subject and not with the

anticipation of any medical discovery, as its known value as a vitamin source is quite sufficient to account for its traditional reputation.

Note. I am indebted to Dr. W. A. Taylor of the Bureau of Plant Industry of the Agricultural Department, Washington, D. C., for his kindness in checking up and confirming my statements in regard to the habitat of the citron and of the time at which it and the orange and lemon were first known in Europe; and also for obtaining specimens of *Citrus Medica* for my vitamin tests.

15. THE TREE OF THE KNOWLEDGE OF GOOD AND EVIL

Of the other tree of the Garden, the tree of the Knowledge of Good and Evil, we are told that it appeared to be good to eat and was a delight to the eye, but that Adam was warned that it was poisonous, "in the day that thou eatest thereof thou shalt surely die." And that it gave a sense of increased mental acuity when taken in sub-lethal portion, followed by depression. It had a habitat in the Caucasus valley.

There is one fruit known which agrees with this description. It was known in the Caucasus region from the earliest times. Herodotus (1: 201) says of the dwellers in the delta of that Araxes "which rises in the mountains of Armenia and flows eastward into the Caspian Sea" that:

"They store up fruits which they gather from the trees to serve them as food in the winter-time. They have also a tree which bears the strangest produce. When they are met together in companies they throw some of it upon the fire round which they are sitting, and presently, by the mere smell of the fumes which it gives out in burning, they grow intoxicated as the Greeks do with wine. More of the fruit is then thrown on the fire and their intoxication increasing they often jump up and begin to dance and sing."

This fruit, the thorn apple, is still found in the region, for the Russian government, in the instructions issued just before the war to settlers in that region, warned against it.

It has an appetizing smell, resembling the apple in its content of malic acid.

Its effects are described in the Encyclopedia Britannica, article Narcotics:

"A small dose causes dimness of the vision, except for distant objects. The pulse becomes quick, rising in an adult from 80 to 120 or 160 beats per minute, and there is often a bright red flush over the skin. The *intellectual powers are at first acute and strong* but soon there is giddiness, confusion of thought, excitement, a peculiar talkative wakeful restiveness, in which the person shows his mind is occupied by a train of fancies or is haunted by visions and spectres. Often there is violent delirium before sleep comes on. From this a person may awake with a feeling of depression- or wretchedness- often associated with sickness and headache."

For a discussion of the possibility that the effect of the fumes of this narcotic on the associative elements of the brain may have been a factor in human development in the past, and may be in the future, see chapter On THE TREE OF THE KNOWLEDGE OF GOOD AND EVIL.

Since the above was written I have received, through the kindness of the Smithsonian Institution, a copy of its annual report containing an admirable paper by Dr. William E. Safford, "Daturas of the Old World and New; an Account of their Narcotic Properties and their Use in Oracular and Initiatory Ceremonies." From this it would appear that the particular thorn-apple which grew in East Eadon was probably the *Datura metel*. This is described as "a spreading plant, sometimes becoming shrublike, with the base of the stem and lower branches woody, and the root, which penetrates deeply into the soil, bearing several branches of similar size." Dr. Safford brings out the interesting fact, which he discovered with the assistance of Drs. Matsumara and Tanaka, that this plant is the supposedly fabulous plant *Mandragora*, "this name being nothing else than the Buddhist pronounciation of Li Shi-Chen's 'man t 'o to kua.' " In this connection the peculiar root will be noted. The flowers are described as "exhaling a sweet but faint lilylike fragrance," and the fruit "like small apples as large as a hulled walnut, but rounder" and the seeds "shaped almost like a human ear and having a sweetish but insipid taste."

It is a strong, but dangerous, aphrodisiac.

16. THE MANDRAKE

The description agrees with the statement of Genesis 3; 6; that it appeared to Eve to be good for food, and was a delight to the eye. This plant is also the "mandrake" of the story of Rachel and Leah, Genesis 30; the reason it was desired by Rachel was because it possesses two other properties, for which it is still used extensively in the east.

17. IMAGES AND TRADITIONS

The substitution of images for the words of the sacred traditions is largely responsible for the failure of many people to realize that these traditions are substantially accurate. For the makers of the images have not as a rule read the traditions and consequently we have the Garden of Eden shown as guarded by a being of human aspect with wings and with a sword in his hand, whereas the words of the tradition are "he placed at the east of the Garden of Eden the kirubi, and the flame of a sword which turned every way"; again we have the ark represented as resting on the top of a mountain peak, whereas the traditions say "on the *mountains* of Ararat," i.e. on the table land of Armenia; (Berosus, writing 250 B.C. says that in his day some fragments of the ark still remained and that the natives used to scrape off the pitch to make amulets of it.) - Would it not be possible to arrange that future representations should be accordant with the traditions.

18. REVELATION TO GREEKS AS WELL AS TO SEMITES

Another and much more important fact will have been apparent, and that is that the concept of a monopoly of revelation to the Semite is entirely erroneous. As we have seen,

and shall see further, the sacred traditions of the Greeks and of other nations not only supplement but are in some respects more accurate, and of a higher spiritual character than those of the Semites. We shall not have a right theology till this is recognized.

19. PROMETHEUS, THE NAPHTHA BRINGER

The pass leading from this enclosed portion of East Aedon has been described, but mention should be made of Mt. Kasbek, which towers 16,400 feet high on the left, for here is the sacred cave at the foot of Mt. Kasbek, where according to the Greek tradition Prometheus, the "fire-bearer" of Aeschylus, was chained for carrying the forbidden "naphthe" from Tartarus through the pass to the Abur. The Greeks not knowing the word "naphthe" thought it must be "naptheg," a hollow cane, and that the fire was carried in some way inside the cane; but it meant mineral oil, "naphtha."

20. THE SHADES

On leaving the dark pass of Erebus (Arabus, Aragus) through the iron gates, the "kuanthuretra" of Aides, the way, still obscured, lies between two rapid streams, the Cocytus (Kochaiton, Black River) on the left and the Pyriphlegethon (fire-flaming) on the right. Dimly visible in the half light in front of the gates and between the streams are many groups of blinded outcasts. Homer describes them as clinging to one another like bats, and wailing. I do not care to give the historical details of this horrible practice; it was continued by the Scythians, who blinded all their slaves, and by the Medes. The wretched beings are there to get food.

21. RIVERS of HADES (AMES)

Further down, the two streams approach each other at a place where there is a great white rock, thence, separating, they both flow down into the valley of Acheron (Ashuron, Apsuron). Acheron has always been taken as a river, but Homer's description is clear. Odyssey, g. 512. "There Pyriphlegethon flows into Acheron, and likewise Cocytus, a branch of the Styx and thereby is a rock" (it was white) "and a meeting of the two roaring streams."

Looking at the map, it will be seen that the Cocytus flows, as Homer states, into the Styx, and the Styx and Pyriphlegethon into the Alontas, and that into the Ocean of Atlantis.

On the eyot between the Cocytus, Styx and Pyriphlegethon was the great city of Tartarus or Atlantis. The contour maps show mounds still there which should reveal much when excavated, for this was the first city which the world ever saw.

Today the town of Grosnyi, which is described as the centre of the present Baku oil district, is on what was then the southeast edge of Tartarus, past which the Pyriphlegethon flowed, eastward, to where were the "Burning fields" and what the Encyclopedia Britannica calls "the remarkable springs of naphtha, near Baku, which have long been known as an object of interest and a sanctuary of the fire worshippers." Of a similar district, where oil will probably also be found, Strabo says, 12; 2; 7; "There are burning plains and pits full of fire to an extent of many stadia. In some parts the bottom

is, marshy and flames burst out from the ground by night. There is danger to cattle, which fall into these hidden pits of fire." There appears to have been natural gas to the east of Eden, i.e. the flaming sword.

The presence of the marshes, with their spontaneously ignitable gases, in the neighborhood of the springs of naptha and the naptha soaked soil and the naptha covered river, made at times an encircling flame about Tartarus. Some of the traditions represent it as always so encircled and the story of Brunhilda may possibly be related in some way to these. But from the other traditions the flame was confined to the side on which the Pyriphlegethon was. It might easily have been admitted to the other encircling rivers in an emergency, e.g. as a defence against attack.

22. THE ROUTE OF THE MYSTERIES; TO HADES AND ELYSIUM

Before describing the city I will tell of the only way by which it was reached from the outside world, the way which was revealed in the mysteries, which was revealed in part by Aeschylus, and was wholly revealed, in detail, up to the white stone at the spot where Cocytus and Pyriphlegethon came close together, by Homer.

Aeschylus was accused of revealing the mysteries and threatened with severe punishment. He was not himself an initiate but his father was a priest of Demeter (whose daughter was once queen of Tartarus). He probably became acquainted with some portion of the way without realizing the importance attached to the knowledge.

Looking at the map, the river Tiber (Hybristes, now Tiberda) will be seen, rising in the Caucasus to the west of what are now known as Mt. Elbruz and Edena Pass. At the bend to the west it flows into the River Oceanus, which flows into the Black Sea at the peninsula of Taman, at the entrance to the Sea of Azov. At the mouth of the Oceanus is the village of the Cimmerians. Strabo says of this, 11; 11; 5; "The Cimmerian village was formerly a city built upon a peninsula, the isthmus of which it enclosed with a ditch and mound." It will be noted that a north wind is the only one which will be favorable all the way up the river.

Circe's directions, as given by Homer, *Odyssey*, 1,506 et seq. are that, after Odysseus has reached "the land and the city of the Cimmerians " and "the deep flowing Oceanus, " he should "set up the mast and spread abroad the white sails and sit thee down; and the breeze of the North Wind shall bear thee on thy way. But when thou hast now sailed in thy ship right up the river Oceanus to its end (di 'okeanoio pereses), where is an ominous shore and the groves of Persephone, even tall poplar trees and willows that shed their fruit before the season, there beach thy ship by deep eddying Oceanus, but go thyself to the monstrous home of Aidoneus. Thereby Pyriphlegethon flows into (the plain of) Acheron, and likewise Cocytus, a branch of the Styx, and thereby is a rock and a meeting of the two roaring streams." When he had reached this spot, Odysseus sacrificed a ram and a black ewe, "bending their heads towards Erebus " (the dark defile) and himself "turning aside" with his "face set towards the shore of the river." And when he had done this "the spirits of the dead gathered from out of Erebus" and answered him, as they stood opposite the point of his outstretched sword.

The place where Odysseus beached his ship was at the bend where the Tiber joins Oceanus. The poplars referred to were a peculiar species, i.e. white poplars. The way from there was along the route of the present railroad from Newinnomysk to Wladikawkas. The Styx had to be crossed because it rises in the neighborhood of Mt. Atlas, and so could not be gone around.

The itinerary of Aeschylus is the same up to the end of Oceanus. Thence, instead of going to Tartarus, his route leads up the Tiber to its head and to the Amazons. He says, correctly, that the Chalybes were on the left as one went up the river.

After reaching the white rock, where Cocytus and Pyriphlegethon come together, if the traveller went to the left he came to Tartarus. If he went to the right he passed through the dark defile of Erebus and came out of the pass into Elysion. This knowledge was the secret of the mysteries which, like that of the Egyptian Book of the Dead, was supposed to be so valuable after death.

23. SOLON'S PARTIALLY COMPLETED EPIC, "ATLANTIS"

The description of the country as a whole is best introduced by telling the story of Atlantis.

Solon, who gave the Athenians their constitution, came of a noble family which had lost its fortune. He became a merchant, for I I in his time, as Hesiod says, work was a shame to none, nor was any distinction made with respect to trade, but merchandise was a noble calling, which brought home the good things which the barbarous nations enjoyed, was the occasion of friendship with their kings, and a great source of experience." (Plutarch; Solon.) He secured Salamis for the Athenians, reformed their calendar and was the first to discern the fact that the scattered Homeric poems were parts of a whole and to take steps to have them collected. After giving the Athenians the laws known by his name he went to Egypt and studied for some time with Psenophis of Heliopolis and Sonchis the Saite, the most learned of the priests.

He was first of all a poet, and many of his verses were sung at the public festivals of Athens. After his retirement as a legislator it was his ambition to write an epic which should rank with Homer's Iliad and Odyssey. The subject was to be the noble deeds of the Athenian nation, long before the war with Troy, in opposing, alone, the domination of Atlantis; of which he had been told by the Egyptian priests, and he had collected a large amount of material from examination of their records.

On his return to Athens he found his legislative work largely undone by Pisistratus, who shortly after established a tyranny. Solon had to drop the epic for more immediate matters, and died with the work scarce begun.

24.. PLATO'S INTERRUPTED REVELATION OF SOLON'S DATA

But the material collected survived, in part at least, and came down to the philosopher Plato, who was a descendant of Solon's on his mother's side. Plato held Solon in great

reverence, was himself a traveler, and endeavored to follow in Solon's footsteps and to give a constitution to Syracuse. He piously desired to preserve the results of Solon's labor, and published a portion of the material in *Timaeus*, and proposed to complete it in two other dialogues. The second of these, *Critias*, breaks off in the middle, for Plato died.

Some great scholars, Jowett for example, whose translation I am going to quote from because it is sure to be better than anything I can do, hold that Plato's relation was a fiction. Now I am a great admirer of Jowett's, so much so that Mallock's book bores me. He was a great man in so many ways, he, and A. L. Smith, turned out *Lao* many great men, scores of them, and did so much for Oxford (Jowett's "sat prata biberunt" and Smith's playing fields); and for his scholarship, the quip that he was elected to the chair of Regius Professor of Greek "in order to encourage him in the study of the subject" has only its bubble of wit for a life preserver. Yet I cannot feel that he had altogether taken into account all the circumstances. Plato had much pride of family, that is seen in his *Dialogues*. For example:

Critias. "Then listen, Socrates, to a strange tale which is, however, certainly true, as Solon, who was the wisest of the seven sages, declared. He was a relative and great friend of my great-grandfather, *Dropsidas*, as he himself says repeatedly in his poems, and *Dropsidas* told *Critias*, my grandfather, who remembered and told me. Now the day was the day of the *Apaturia* which is called the registration of youth, at which, acceding to custom our parents gave prizes for recitations, and the poems of several poets were recited by us boys, and many of us sang the songs of Solon, which had not gone out of fashion. One of our tribe, either because he thought so, or to please *Critias*, said that in his judgment Solon was not only the wisest of men, but also the noblest of poets. The old man, as I well remember, brightened up on hearing this and said, smiling: Yes, *Amynder*, if Solon had only like other poets made poetry the business of his life and had completed the tale which he brought with him from Egypt, and had not been compelled by reasons of the factions and troubles which he found stirring in his own country when he came home, to attend to other matters, in my opinion he would have been as famous as Homer or Hesiod or any poet."

Now those who told "traveler's tales" were looked upon with a rather peculiar contempt by the Greeks. Is it likely then that Plato should have made the most distinguished and revered member of his family a Baron Munchausen. Would he not have put the fictitious tale in the mouth of a fictitious person. To me this would be conclusive, even if I did not from other sources know that the relation was true.

Jowett says, in discussing another point, "It is singular that Plato should have prefixed the most detested of Athenian names to this dialogue." Singular indeed, if the relation were a fiction. But if Plato knew it was true would it not be rather unavoidable that he should give to the dialogue the name of the man from whom he had received the material gathered by his famous ancestor and which constituted the entire dialogue.

Plato went out of his way, in the face of expressed incredulity, to say he believed it. *Posidonius* cites the opinion of Plato, "That the tradition concerning the island of Atlantis

might be received as something more than a mere fiction." As regards the theory that Solon himself might have invented it, we know Solon's opinion of fiction. Moved by curiosity he went to see the first play, acted by Thespis. After it was over he called Thespis aside and asked him if he were not ashamed to tell so many lies before so many people. Thespis said there was no harm to do so or say so in play. Solon struck his staff vehemently on the ground; said "If we honor and commend this in play we shall soon find it in our business." Hardly the man to think his reputation would be increased by making up traveler's tales.

25.. THE ROUTE TO ATLANTIS - WHY IT WAS IMPASSABLE AFTER THE DELUGE

To come to the story itself. Critias learned it word for word.

"When a child I listened with great interest to the old man's narrative at the time; he was very ready to teach me, and I asked him again and again to repeat his words- and I rehearsed them, as he spoke them, to my companions, that they as well as myself might have material of discourse."

Critias says: Solon learned it at the city of Sais, in Egypt, which city had a deity "which is called in the Egyptian tongue Neith and is asserted by them to be the same whom the Hellenes called Athene" (this was correct; Aeth and Aethon). One day, in discussing history, one of the older priests said that their records contained accounts of a number of great deeds by the ancient Athenians and others. Solon asked about the Athenian deeds. The priest said:

"One of them exceeds all the rest in greatness and valour. For these histories tell of a mighty power which was aggressing wantonly against the whole of Europe and Asia and to which your city put an end.

"This power came out of the Atlantic Ocean, for *in those days the Atlantic was navigable*." (It will be better to read this with the map; with especial reference to the passages I have marked by italics.) And there was an island situated in front of the straits" (of Kertsch) "which you call the Pillars of Hercules; *the island was larger than Libya and Asia put together, and was the way*" (by the Manytsch Lakes and other passages, see map) "to other islands" (Ust-Urt and others), "and from the islands you might go to the whole of the opposite continent" (western Mongolia) "which *surrounded* the true ocean" (the Ocean of Atlantis).

"For this sea" (of Azov), "which is within the Pillars of Hercules *is only a harbor*, having a narrow entrance" (straits of Kertsch, where the city Heraklea and the Pillars were), "but that other" (the Ocean of Atlantis) "is the real sea and *the surrounding land* may be most truly called a continent."

"Now in this island of Atlantis there was a great and wonderful empire, which had rule over the whole island and several others as well as over parts of the continent, and besides these they subjected the parts of Libya within the columns of Hercules as far as Egypt, and of Europe as far as Tyrrhenia" (northern Italy).

The Athenians withstood them, "But afterwards there occurred violent earthquakes and floods, and in a single day and night of misfortune *all your* warlike men in a body sank into the earth, and the island of Atlantis in like manner disappeared, and was sunk beneath the sea. And that is the reason why *the sea in those parts is impassable and impenetrable*" (shoals in upper Azov), "*because there is such a quantity of shallow mud in the way*; and this was caused by the subsidence of the island."

Examination of the contour maps show that the Manytsch and other passages were formerly considerably wider than at present, and have been almost obliterated by the silting.

26. DESCRIPTION OF ATLANTIS

In the next dialogue of the trilogy, Critias goes on with the description. (In passing I may say, as pointed out before, that the country of Athens to which the Egyptian priest's records related was not the later Athens of Solon and Plato, but an earlier land of Athens, the triangle included between the River Urup, the Oceanus (or Aesop) and the Caucasus Mountains. ~ This is immaterial to the story, but not uninteresting.) After describing the Athenians and their government, he gives details of the chief city of Atlantis, i.e. Tartarus, and the surrounding country.

From examination of a large scale map, giving contours, it will be seen that the northern portion' of the Caucasus isthmus is a low plain. To quote the Encyclopedia Britannica, article Caspian:

"Although the Black Sea proper is separated from the southern portion of the Caspian by the mountainous region of the Caucasus, yet between the Sea of Azov and the northern portion of the Caspian there is only the low steppe inhabited by the Don Cossacks and the Kalmucks; and according to Major Wood, an elevation of the Black Sea of no more than 23 feet would cause it to overflow into the basin of the Caspian by the line of the Manyteh."

This low plain was densely populated. A great system of canals drained and watered its entire extent. A few, sheltered by projecting spurs, escaped complete silting by the Deluge, and Pharnaces, about B.C. 50, "brought the river Hypanis" (Oceanus, now Kuban; the Oceanus was called also the Hypanis because it was one of the boundaries, "Hpana," of Atlantis; many of these names survive in the Basque) "over the territory of the Dandarii, *through some ancient canal, which he had caused to be cleared*, and inundated the country." (Strabo, 11; 2;11.)

The soil was deeply alluvial, easily excavated, and some of the canals were of large section; especially those connecting the Oceanus and Styx-Alontas and constituting a drainage system for carrying off the flow from the Caucasus slopes. Though silted up, it might still be possible to trace some of them out from an aeroplane; the method which has been found so valuable in locating the silted up canals of Mesopotamia.

27. HEPTACYCLIC FLOW OF THE STYX

The Egyptian-Phoenician tradition states that Tartarus was encircled by three concentric canals, the land between the outer and middle canals being three-eighths of a mile wide, and that between the middle and inner canals a quarter of a mile wide.

This did not seem probable, and I was inclined to discard that dialogue of Plato's in which this statement is made. Later, I remembered that in several traditions from Greek sources the Styx is described as encircling Tartarus seven times (see Smith, Classical Diet. art. Styx), which has no intelligible meaning as applied to a river. But taking the two statements together they make a consistent and rational whole, for if the opening from the Styx into the canal system were at the eastern side of Tartarus (which would be the proper engineering side) then according to the older Greek way of reckoning the Styx would flow around Tartarus seven times.

Both Egyptian-Phoenician and Greek traditions give Tartarus three walls, which is consistent with three canals or moats

This made me re-consider the dialogue, "Critias," because when A hands on a statement, 'absurd and incomprehensible to him, which he has received from B, about X; and C hands on a second equally absurd and incomprehensible statement about X which he has received from D; and the two independent statements make a consistent and reasonable whole, this is the strongest kind of evidence that all parties were telling the truth. One illustration of this is the first circumnavigation of Africa. Herodotus, 4; 42; says: "On their return they declared- I for my part do not believe them, but perhaps others may- that in sailing round Libya they had the sun on their right hand." A second is the visit of Abaris to Greece. Herodotus says, 4; 36; "As for the tale of Abaris, who is said to have been a Hyperborean and to have gone with his arrow" (his insignia as a priest of Apollo on a mission) "all round the world without once eating, I shall pass it by in silence."

Herodotus did not know that, going west, south of the equator the sun rose on the right hand and so, as Rawlinson points out in his note, this is conclusive evidence that Africa was actually circumnavigated. And Herodotus did not know that the Hypibereans were vegetarians (see Strabo and Smith, quoted above), and that therefore Abaris, like George Bernard Shaw, ate nothing at public functions. Shaw, asked why he did not eat at least the vegetable courses, said that it would spoil his appetite, so he had his dinner before; and Abaris was probably equally sensible.

28. THE NAMES OF THE TEN PRE-DELUGE KINGS OF ATLANTIS, WHEN TRANSLATED, THE SAME AS THOSE OF THE TEN PRE-DELUGE KINGS OF THE BABYLONIAN AND SEMITIC TRADITIONS

The fact that the Greek and the Egyptian-Phoenician traditions, incomprehensible apart, were clear and confirmed each other when taken together, was interesting and important. But further examination of the dialogue, Critias, led to a discovery of such nature that the authenticity of Plato's narrative can never be rationally questioned in future. For I found that *he gives a list of ten kings, followed by a Deluge;* in exact agreement therefore with

the Priestly narrative in Genesis and with Berossus's transcription from the Babylonian records. Moreover, though these lists will no doubt ultimately be found to be in agreement, so far only two or three of the names in the list of Berossus have been identified satisfactorily with those of the Priestly narrative, but I have been able to identify no less than six in that list with names, corresponding, in the list given by Plato.

The agreement of some of the names is provisional because what Solon did was to get the Egyptian priest to give him the meaning of the names and then to translate them into Greek, and no man has the right to think he has been able to reverse that process and then identify the result with the Babylonian names from which those of Berossus's list are derived without making mistakes. More competent Orientalists than myself will no doubt reject some of the identifications; others, perhaps most, may be accepted.

The names of Plato's ten kings are to be found in a certain list of ships and it has been argued that this is a proof that the kings are fiction. This is a curious illustration of the way the same fact will be interpreted by different men. For myself, if I wished to know the names of the members of the royal family, or of the kings of England, or of its counties or great battles, in the absence of other reference books I should go to a list of the ships of the British navy.

29. THE CITIES WHERE THE TEN PRE-DELUGE KINGS OF THE BABYLONIAN TRADITION LIVED IN THE KINGDOM OF ATLANTIS, IN THE CAUCASUS ISTHMUS

(Note added Sept. 12th, 1923. Since the above was written I have received a copy of Dr. Clay's "Origin of Biblical Traditions" containing Professor Langdon's translation of a fragmentary list from a tablet in the Ashmolean Museum, i.e.

Place on list.	City on list.	My identification (in Caucasus isthmus)
1 and 2	Khabur	Abur
3 and 4	Larsa	Karsa
5 and 6	Dur Tibiri	Tibir
7 and 8	Larak and Sippar	Arak and ?
9 and 10	Su-kur-Lam	Sakar

In this list the names appear in pairs, with the exception of 7 and 8. In Plato's list the names also appear in pairs. In Abur (Iberia) the kings were chosen in pairs. "The nobles, from whom two kings were chosen." See also Strabo, 11; 3; 6. And they had a double deity, Ur-Al (Khur-Khal). Compare the Cabeiri.

30. SOLON 'S LIST OF KINGS MADE MORE THAN THREE CENTURIES BEFORE BEROSSUS MADE HIS BABYLONIAN LIST; AND MORE THAN TWENTY-FIVE CENTURIES BEFORE THE SEMITIC LIST WAS DISCOVERED

Solon was in Egypt about 600 B.C. Plato wrote his dialogues before 350 B.C. Berossus transcribed his list from the Babylonian records 100 years later, i.e. about 250 B.C. Ezra the scribe did not collect the Pentatuch until about 450 B.C. i.e. 150 years after Solon,

and the Priestly narrative was not isolated until quite recently and does not divide the names into pairs.

Solon and Plato have therefore handed down to us a tradition of the Deluge, entirely independent from and equally authentic with, the other great Deluge traditions. And this tradition is our first, and so far, though we have much archeological information, our only written source of knowledge of this great civilization which existed before the Deluge.

31. OTHER BABYLONIAN TRADITIONS RELATING TO ATLANTIS; SHAMASH AND MARASH

Other Babylonian traditions may refer to Tartarus. For they speak of mountains "whose back extends to the dam of Heaven and whose breast reaches down to Arallu" (hades; see Clay, Amurru. p. 77). Examination of the map will show that the expression applies well to Tartarus, and both Tartarus and Erebus are sometimes called Ur-al. Also, in the Gilgamesh tradition there is some evidence that the mountain at Shamash and the gap at Marasy which together form a rude observatory resembling Stonehenge except that the gap is natural, and where the zero meridian of longitude passed, were the place of Mar-tu, where Shamash, the sun, entered in, and where Noah built the ark. If so, Gilgamesh may have come from the neighborhood of Lake Urmia to pay his visit. That Ashurta went round Tartarus and left portions of her clothing at each of its seven gates is not inconsistent with the Greek traditions

32. THE CEREMONIAL SINGLY CONFERENCES AT UR-AL-U; THE ROUND TABLE OF URT-UR; THE GRAAL; THE WATER OF LETHE

The ten rulers governed the land and held conferences in Tartarus every fifth and sixth years alternately, concerning inter-state matters.

These conferences were held in the temple of Neptune, only the kings being present, and all matters were decided in one day. I.e. they not only had a league of nations, but they had discovered the only possible way to operate such a league to get results. The procedure was as follows:

The conference was held in the Temple of Neptune. The kings first caught and sacrificed one of the sacred cattle of that temple. For the capture nooses and staves only must be used. This ceremony appears to have been the prototype of the ceremonial Minoan bull fights. Compare also Herodotus' description 7; 85; of the Sagartians, an AI race living between the Caspian and Black Seas. "It is not the wont of this people to carry arms of bronze or steel, except only a dirk. When they meet the enemy, straightway they discharge their lassoes, which end in a noose," Herodotus wrote approximately B.C. 400, or almost two centuries later than Solon's visit to Egypt.

The captured bull was led up to a column of orichalcum on which the laws were engraved, laid on it, and his blood shed over the sacred inscription. The column was then purified.

A ceremonial oath was taken. A large bowl was filled with wine, into which each king put a few drops of the sacrificial blood, and then all drank from it in golden cups, pouring some of it on the sacrificial fire and making oath that they would judge in accordance with the laws on the column. Compare Herodotus 4; 70; "Oaths among the Scyths are accompanied with the following ceremonies; a large earthen bowl is filled with wine, and the parties to the oath, wounding themselves slightly with a knife or an awl, drop some of their blood into the wine; lastly the two contracting parties drink each a draught from the bowl, as do also the chief men among their followers."

Note. The cobalt-blue patinated (kuano) altar of orichalcum, sapphirus, the round table of Urt-ur, was brought to Wales and was in existence A.D. 1,100. Search should be made. The laws are graven on its top. The Ghur-al, which held the drops of blood of the Five Tribes, went to Aburon.

"After spending some necessary time at supper, when darkness came on, and the fire about the sacrifice was cool, all of them put on the most beautiful azure robes, and sitting on the ground, at night, near the embers of the sacrifice over which they had sworn, and extinguishing all the fire about the temple, they received and gave judgment if any of them had any accusation to bring against any one; and when they had given judgment they wrote down their sentences on a golden tablet and deposited them, together with their robes that they might be a testimony."

The azure robes may have been dyed with woad, which was known in that district. (Herodotus, 1; 203.) The reason why the kings sat about the embers of the sacrificial fire while giving judgment was not known to Plato, but may, I think be known to us, for in that country there grew (Herodotus, 1; 202) "A tree which bears the strangest produce. When they are met together in companies they throw some of it upon the fire round which they are sitting, and presently by the mere smell of the fumes which it gives out in burning" they are affected in such a way that (Ency. Brit. 17 ; 232 ;) " the intellectual powers are at first acute and strong." From other sources we learn that the "sacred vapor of prophecy" of the atechnic oracle was a fume so produced. The water of Lethe (1-aeth-e, water-empty-ness) was a decoction of the seeds; see Dr. Safford's paper, *ibid.* for a description of its use by the Indians to produce entire forgetfulness of past life.

33. EXPLANATION OF THE REPUTED LONGEVITY OF THE KINGS - THE KINGDOMS

It was the practice to call these kings after the name of their kingdoms or people, so the king's name was always the same. The king of Aedon (Aides, Hades, Gades) was always called Aetas (Aides, Hades, Gades) or Aidoneus (Adonis). This may be the reason why such long reigns are attributed to these kings and the origin of the belief in their great longevity. The kings also had specific titles, e.g. Aidoneus was also called Thammuz. Tham or Am meant ruler or lord. Uz (aes) meant rock or mountain and later something very hard and strong, iron, bronze, power. So Thammuz meant "Lord of the Mountains." In tracing out the kingdoms it must be remembered that the name of Atlas was first given to Mt. Kasbek, and only after a long time transferred to Mt. Elbruz. There are indications that in some way this transference was at first accidental, i.e. that those who saw ' Mt. Elbruz thought they were seeing Mt. Kasbek; why, is not evident.

The first city, Atl-ont (Atlontas, Atlantis) was founded by the A1 on the eyot between Cocytus, Styx and Pyriphlegethon. Later it took the name Tartarus, from the Ur. Possibly the change of name did not take place until shortly before the Deluge, excavations may tell us about this.

The kingdom of Hades appears to have been at first between Ail-ont and the Caucasus range, and later to have conquered Atl-ont, which then took the name of Tartarus. We must first definitely locate the other pair of pillars of Hercules, i.e. those which were inland and are referred to by Ptolemy as "Pillars of Alexander," also the artificial channel of the Alontas, about ten miles long and 100 yards wide, which should be somewhere near the present Braguny, before we can speak with any definiteness of the boundaries of the kingdoms. Another kingdom was that of Udon, and another that of Aethon, between the Urup and the Azov. The kingdom of the Chalybea (or Chaldaei; this does not depend merely on Strabo 's statement that "the present Chaldaei were anciently called Chalybes," Strabo 12; 2; 19; or on the statements of other Greek writers; there is other evidence) was at first in the peninsula of Apscheron or Ashur but was later extended to the neighborhood of Mt. Tamischiera, the lordly mountain of metals, of which the writer of the book of Enoch seems to have heard, and which was near the Caucasus or "white mountains," north of Elbruz. At the time of the Deluge the Chalybes or Alyb were ruled by a queen Ashurta or Ashirta. Tradition states that she was married to Aidoneus or Adonis, king of Hades and Tartarus, who was also called Tham-uz, Lord of Power.

Other names of nations have been found but most of them seem merely variants. E.g. the Meropes, who settled Cos and of whom Silenus speaks were the dwellers on the Urup River. The Tammes who settled Boetia and other places were subjects of Tham-uz, i.e. Aedi. The Telchini were Chalybes. This matter is covered in another chapter.

34. WHY MANKIND HAD ITS ORIGIN IN THE CAUCASUS ISTHMUS

Physical characteristics, more extraordinary than it would have been possible to conceive, were the cause of the development of civilization in this northern portion of the isthmus. On Map A the southern extension of the last glacial age is shown by a wavy line. On the east it came down to the Ocean of Atlantis, on the west the region between the glaciers and the northwest shore of the Black Sea was a vast morass of which as late as Herodotus's day, "according to the account which the Thracians give, the country beyond the Ister is possessed by bees (mosquitoes) on account of which it is impossible to penetrate further" (Herodotus, 5; 10). The life which had been pushed down by the glaciers of this region was therefore pocketed between the glaciers on the north, the Ocean of Atlantis on the east, the Black Sea on the west and the Caucasus, impassable then, because its hidden gate was yet to be discovered, on the south. It is doubtful if there would be much search for a passage south, for the snowcapped mountains would probably be considered as glaciers to the south.

And there would be no inducement to go farther. It would almost seem as if the Creator, growing impatient at the futile and tedious Paleolithic developments, had swept Man up

into this corner and said "Here is everything yon can possibly need," for here were fire, metal ores, timber, alluvial soil, irrigating streams and useful animals and fruits and grains.

It would seem that the principal obstacle in the way of the development of Paleolithic man was that he had no fire. The generally accepted theory is that he had fire, as charred bones have been found with Paleolithic remains. But this does not convince me, for, as a chemist, I know that it is possible to produce charring without fire. And there is one thing which definitely indicates that the use of fire was not known, i.e. the acknowledged absence of pottery in Paleolithic remains. Every time a fire was built on a bit of clayey ground it would produce a pottery container which would have been invaluable to the fire builder; that there is no pottery means that there was no fire.

But at the foot of the Caucasus was the greatest source of fire that the world has ever known. "The whole soil of Apsheron is said to be saturated with naphtha, which rises whenever a hole is bored; and round the town of Baku there are nearly a hundred bituminous springs, from many of which considerable supplies of naphtha are drawn. Some of these are constantly burning; and one of them, termed the "Burning field" was formerly a celebrated "shrine of grace" to the Ghebers or Parsecs, multitudes of pilgrims resorting to it as Mahometans do to Mecca." (Ency. Brit. art. Caspian Sea.)

The description just quoted applies to the district after the soil and wells had been burning for more than 10,000 years; it is fair to assume that primitive man found the burning fields and wells on a greater scale than at present; and as accidents to shipping have shown that a few tons of oil will spread flame over many acres of water in a harbor, the Pyriphlegethon, flowing through what is now the centre of the Baku oil district, with crude oil carrying a high percentage of naphtha floating on its surface and ignited by the burning fields, must have presented an appearance very much as tradition states.

The use for food of cattle fallen into the burning pits, as described by Strabo, would have led to the use of fire for cooking. Pottery would follow, for any man who had been tediously chipping stone into shape for days would realize at once the importance of the fact that the soft piece of clay which he had put into the fire had become hard without changing its shape.

It is not probable that stone implements will be found in this region, as the use of stone would have been abandoned almost immediately.

35. MINERAL WEALTH AND WATER POWER OF THE CAUCASUS ISTHMUS

In the peninsula of Apsheron are great numbers of outcropping deposits of rich iron ore, and "so simple is the operation required for extracting a small mass of iron from rich ore that the primeval man may have discovered it by means of a fire accidentally lighted upon ground where iron ore existed near the surface." (Prof. Saveur, Scientific American, Sept., 1923.) Even this would not have been necessary, for blocks of the outcrop would

be carried down to the valley of the burning pits and found there as lumps of iron. "Iron and copper ores are known to occur in abundance," and gold and silver, the gold apparently only in placer deposits (the location of the ore bodies from which it came would be an absurdly easy task for a modern mining engineer; the bodies must be immense), but the silver appears to have been mined. There are many deposits of magnetic iron ore; extensive deposits of bauxite; manganese occurs in extensive masses as pyrolusite and psilomelane, high grade and generally free from impurities; deposits of corundum; clay deposits of exceptionally high fusing point and low impurity; phosphate rock; "marbles of endless variety"; slate of fine texture and easy cleavage; ochre; asbestos; pyrite, steatite; graphite; a great variety of semi-precious minerals; sulphur; mercury ores; cobalt. (Ency. Brit. 5; 257 and 26; 677.)

A kind of brass or bronze called oricalchum was made by the Chalybs and carried to Greece by the Phoenicians. From the description it was an alloy of nickel and copper, or possibly cobalt and copper. After about B.C. 750 it was no longer obtainable by the Greeks; possibly before that. A search for nickel ores should be made in this district, as the description fits much better to a nickel alloy than to a cobalt.

The names for the metals came from the Caucasus isthmus. E.g. chalybs (steel), chalkos (brass), acs (bronze), and aithon (iron), are derived from chalyb, ae, and aethon. Some may be tempted to see sideros (iron) from iberis, but such a derivation is absolutely not possible.

Note. It is from ae-t-ur-os, "emptiness thing fire stuff" i.e. space fire stuff, star stuff.

(Note. The Caucasus is better provided with power than any other place in the world. The principal sources are:

1. Hydraulic, from the melting of the glaciers and rain fall, 120,000,000 h. p.
2. Hydraulic, from flow equal to evaporation, from Black sea to Caspian Basin, 5,000,000 h.p.
3. Oil.
4. Gas.
5. Coal.
6. Wind power.
7. Thermal.

The figures for the hydraulic power may be taken as correct; the writer was engineering commissioner for the Ontario Niagara Falls Power Commission, and that plant was erected by his assistants. They are the horsepower obtainable from the sources 365 days per year, 10 hours per day.) With a free hand and a golf course one could in five years (the financial problems have not been overlooked; the writer was brought up in the banking business) transform the Caucasus isthmus into a creative Hyperborea which would supply all of Russia with more than it could possibly use of everything except cereals, and give opportunity for the development of a civilization as it should be, i.e. one in which the necessary physical labor becomes a form of healthful, universal and useful physical exercise and all else is a matter of individual initiative.)

36. EVIDENCE THAT SPEECH HAD ITS ORIGIN IN THE CAUCASUS ISTHMUS

There is evidence, from the language itself, that man had no spoken language until he came to the isthmus, and that he learned to speak there. The thing that apparently impressed him most on the isthmus was the fire, for which his word was "ur." Ash meant "up from," so ashur meant something that fire came up from. Wood was ashur, and the ocean to the east was ashur, because the sun, which to him was a fire, came up out of it. Aps meant the place where the sun came up, and so the east, and the horizon, and then the end, and the crest of a mountain. All the early word roots are of such a character that they could hardly have originated anywhere except on the isthmus. Ur and al were onomatopoeic.

37. PRIMITIVE THEOLOGY AND SCIENCE

And so with his theology and science. If he had been asked what his religion was he would have said that he was a rationalist; he believed what he saw. He knew there was someone up in the sky who took an interest in his doings and was sometimes seriously offended with him, because the one in the sky sometimes shot flaming arrows at him. He knew they were arrows because he had picked up the heads, and here were some of them. ("These objects, known as tektites, or fulgarites, now known to be small meteorites as the result of Professor Hoegbom's investigations, have been found in great numbers in Czecho-Slovakia, the East Indies and Australia. They are only an inch or two in diameter, consist chiefly of molten glass, and are curiously marked." *Science*, July 9th, 1923.)

He knew the being in the sky was powerful, because the arrows were shot with great swiftness and the arrow heads were much larger than men used. The one in the sky must be very, very old, because he used stone arrow heads, such as men used in far back time.

He held a vessel of water in his hand and the water did not fall out unless there was an opening in its bottom. He could stop it from flowing out by closing the opening. Rain therefore was water which was kept from falling by a ceiling or firmament which had openings in it (windows) which were normally closed.

He could see for himself that this firmament was held up by the Caucasus, because they were far higher than anything else, and a great level plain of white was often visible, resting on their peaks. The firmament was very real to him. Once when Alexander sat drinking with the ambassadors of a savage tribe, the lapodes, he asked them of what they were most afraid, thinking they would say, of him; but they said "it was not of any man, only they felt some alarm lest the heavens should on some occasion or other fall on them." (Strabo, 7; 3; 8.)

Before they discovered the gate, the Caucasus mountains were taken as an end wall, and therefore the end of the world, and the inland Pillars of Hercules were set up there. After the gate was discovered they were taken as central support of the firmament.

Springs were obviously water coming from a subterranean reservoir. As the water was not seen to go back, it was thought that the reservoirs above and below were connected in

some way. When the Theraeans colonized Libya they settled at Aziris, but after they had been there six years the Libyans asked them to move, saying they would show them a much better place. The Libyans brought them to a place west of Aziris, where there was a spring, and told them, " Here, Grecians, is the proper place for you; for here the sky leaks." (Herodotus, 4; 158.)

38. DEVELOPMENTS IN SCIENCE; THE ZIGGURATS; THE CABEIRI; THE LONGITUDE OF BABYLON

But neither science nor theology remained for long in this crude state. The theory of numbers was derived from their study of the ratio of the lengths of the strings of musical instruments (they were passionately fond of music; but the Egyptian people are said to have had only one tune, the Linus. Herodotus, 2; 79; the negroid races have always attached more importance to rhythm than to melody), and geometry and hydraulics and mechanical engineering would be forced upon them by their irrigation problems. They learned a great deal about metallurgy from the working of ores, though true glass does not appear to have come until later, possibly because, using oil, their attention had not been called to the effects produced by fusing sand and wood ashes.

To know when to plant crops they had to know the time of the year and they made considerable progress in astronomy. One of the earliest, but not the first, of their observatories was at Shamash and Marash, on the Asheron peninsula, where a gap in a mountain spur running north and south let a ray of light from the rising sun tip the peak of a mountain on one day of the year. It was the meridian passing through this observatory that the astronomers of Babylon took as their prime meridian.

The ziggurats of Babylon had horns on them, a primitive kind of transit, derived from the earlier use, for this purpose, of the horns of a bull. The peculiar bull horn ornaments of some Minoan public buildings possibly had their origin in this use and may have functioned as sun dials; they are represented as associated with the Cabeiri.

No substantial advance in science or technology appears to have been made from the time of the Deluge to the break up of the Cabeiri, about 550 B.C. During all this period science and technology were in the hands of this close corporation, but about B. C. 600 the Scythians, who had been expelled from Asia, made it impossible for them to maintain the headquarters of their organization in the Apscheron Peninsula. The attempt by Zalmoxis and Pythagoras to establish a new headquarters in Italy failed, it was suppressed throughout the Roman Empire, moved to Britain B. C. 10, and disappears. Freed from its fetters, science and technology made rapid advances. The so called teachings of Pythagoras give a fair idea of the stage of development which had been reached. In some respects it was quite advanced, for example it was known that the sun was a body of fire round which the earth and planets revolved, but they do not seem to have known of the properties of the ellipse, and though they knew that bodies were attracted to a centre, do not seem to have distinguished between cohesion and gravitation, or to have known the laws of the force.

39. DEVELOPMENTS IN THEOLOGY

Even before the Deluge theology had become quite complicated. The first god was Ur or Al, the god of light. Then came Aee or Ea, the god of the sea, who was called Aem or Eam, lord of the sea, and whose name later became Tem, Tam, Tham, Jam, Jawb or Jove, and still later, in the southeastern portion of the Apscheron peninsula, Sham and Shom. There was conflict between the two religions and each god as a result took on attributes of the other, e.g. Al became also a storm god and Shom also a sun god. The Semites appear to have first worshipped Sham or Shom as a sun god, and then to have worshipped the sun under the name of Al or El; and still later, after their sojourn in Egypt where the old name Jam had been preserved, and influenced thereto by Moses, the Hebrews returned to the worship of Jam or Jah. En or An was the moon god.

For the theology subsequent to the Deluge the reader will best consult the works of those eminent orientalists who have written upon the subject, especially Clay.

The Hercules of the Greek myth is not the same as the Phoenician Hercules (see Herodotus, 2; 44). The former was an adventurer who raided the Caucasus isthmus, carried off the cattle of Geryon (Uruon, or Guruon; compare the Gerusia of Carthage) and (a similar story is told of Samson) the gates of Erebus, and was assisted by the king of the Alizonians, who gave him transport up the river Oceanus in a camera or covered boat whose top was of gold.

Hercules of the Phoenicians, Khurkhales (Ur-al), was a deity, the sun god Shom or Som, who had a spring festival, called "the awakening of Hercules," and was the patron of sailors. Magnets were called "Heracleian stones." The Phoenicians did not make images of deities, but put up pillars. Hercules was a twin deity, whose names were Ur and Al; hence two pillars with lights on top and the two kings. Hiram put two such pillars before Solomon's temple, Jakin and Boaz. The idol of Ashirta was a post of white poplar.

40. THE "WAILING FOR THAMMUZ"; THE AMAZONS

One great rite which spread throughout almost the whole of the ancient world and degenerated into a religion of undescrivable practices had its origin from the catastrophe of the Deluge, i.e. the "Wailing for Thammuz" or Aidoneus by Ashirta, queen of the Chalybs, who lived in Uroch. Thammuz, king of Aides, and his forces were drowned, together with the Athenian troops, by the Deluge, but many women escaped. These, as stated in Solon's narrative, were accustomed to share in all duties and labor with the men, which, he says, is why Athene is represented as armed. The custom persisted down to classical times, "The belief of the Greeks in the Amazons may have arisen from the peculiar way in which the women of some of the Caucasian districts lived and performed the duties which in other countries devolve upon men, as well as their bravery and courage which are noticed as remarkable even by modern travelers." Smith, Class. Diet. art. Amazons. "But chiefly when it was observed that certain characteristics of the Amazons actually existed in the women of Sarmatia." Ency. Brit. art. Amazons. These women lived between the rivers Urup and Tiber; see Aeschylus, quoted above. The Scythians called them Oiropa, which Herodotus takes to be "Oior-pata" or man slayers, but which was really "Europa" from the river on which they lived. The women may have

owed their survival to the fact that they were serving with the forces of King Aidoneus and that their regiments were stationed on the mountain.

"Theophanes, who accompanied Pompey ; in his wars and was in the country of the Albanians, says the Gelae and Legae, Scythian tribes, live between the Amazons and the Albanians, and that the river Mermadalis (Tiber) takes its course in the country lying in the middle between these people and the Amazons. But other writers, and among them Metrodorus of Scepsis and Hypsicrates, who were themselves acquainted with these places, say that the Amazons bordered upon the Gargarenses on the north, at the foot of the Caucasian mountains which are called Ceraunian," Strabo, 11;5;1.

There is no inconsistency between the authorities quoted by Strabo, and the position is exactly that given by Aeschylus, and, as will be seen from the map, is within a few miles of the mountain Tamischiera, "which is the boundary between them and the Gargarenses, and on which they spend two months of the spring." Strabo, *ibid*.

Tamischeira is not a high mountain (6,000 ft.) but it is the outermost of the northern spur of the Ceraunian mountains, and from it it is possible to see far out over the plain; it is in the country of the Chalybes, and since it was the place where the women observed the rite of the "Wailing for Thammuz." there can be little doubt but that it was from this point that Queen Ashirta saw her husband and his forces drowning in the Deluge.

Each year, on the anniversary of the Deluge, the women went to mount Tamischeira and for two months bewailed the death of Thammuz. Surviving men of the adjacent nation, the Gargarenses (Tartarenses) joined them in the rite. It would not have been rational, under the circumstances, if they had not intermarried. But the women were unwilling to surrender their independence and so "the female children which may be born are retained by the Amazons themselves, but the males are taken to the Gargarenses to be brought up."

The women of the Chalybes thus became the Amazons (Thammuzons-Strabo gives the derivation as from Alizones, but though this is possible it is not probable. Homer speaks of both Amazons and Halizonians), and for many centuries maintained this strange social experiment successfully. The Phoenicians carried the rite and the customs which had become attached to it to other lands, where was no justification of circumstances and where it became merely an excuse for sensuality.

41. CONCLUSION

A great civilization was wiped out by the deluge. We can see the slopes of Mount Tamischeira, covered with the women of the Chalybes, their queen among them, terrified by the earthquakes, looking out over the drowning plain through the storm of rain, as the great tidal wave sweeps past to the west. It is the last scene, when the light comes the shuddering spectators will leave that stage, the far dispersion has begun.

IV

BY-PRODUCTS OF HISTORY

The data for the reconstruction of the history and civilization of the Caucasus isthmus is quite dispersed in the literatures and archeological remains of a number of civilizations; in the years during which it was gathered other data, relating to other problems, separated from the historical magma. Some part of this and of the deductions were given in. 1909 in the paper on " Hysteresis in Social, Moral and Economic Functions" referred to in a previous chapter.

I. "NATURAL RESOURCES" A FALSE CONCEPT; THE CAUSE OF WAR AND OF HIGH PRICES

The following is quoted from sec. 3:

ECONOMICS.

A CATECHISM FOR USE IN SCHOOLS

Q. What are "the natural resources of a nation"?

A. A false concept; the cause of war.

Q. Are not woods, waterfalls, coal, oil, natural resources of a nations

A. No; they are not natural, and whether they are resources or detriments depends upon the stage of civilization.

Q. Explain this; with reference to woods.

A. Woods were at first a detriment because they occupied ,ground which might have grown fruit bearing trees or crops. They were never a natural resource, but they became an artificial resource through the invention of fire, the axe and woodworking tools. At the present time they are again becoming a detriment, for the capitalized annual insurance against - fire, excess fire losses, excess depreciation of buildings over cement, excess heating losses, prevention costs, amount to more than twice the total value of the woods themselves. Their present cheapness stands in the way of the development of cheaper and better materials, i.e. cement and plant or mineral fibre board; large quantities of fertilizer would be produced in the manufacture of cement, and the lowered cost of cement would give better roads. For economic reasons they should be burned down; for aesthetic reasons solely, they should be preserved.

Q. With reference to waterfalls.

A. Waterfalls were never a natural resource. They became an artificial resource when methods of irrigating land were invented. They became a detriment when ships were

invented. They again became an artificial resource when hydraulic power plants were invented. They are now again becoming a detriment because the capital invested and the cost of their power stands in the way of the development of cheaper and better sources of power, i.e. large scale coal burning power plants, sun power plants, wind power plants.

Q. With reference to so-called "natural resources of the nation" generally.

A. All national resources are artificial, and all become national detriments in time. To hoard them is to waste them; not more than a fraction of one per cent of the coal or oil in the world will ever be taken out; water heads not utilized for power purposes within the next fifty (35) years will never be developed except as accessory to some other objective, or because of exceptionally favorable conditions.

Q. Explain your statement that this false concept is the cause of war.

A. In the early time the people of neighboring nations were considered the natural power resources of a nation. The Scythians used to capture large numbers of prisoners, blind them, and use them for milking mares and making butter, feeding them on the skim milk. Seafaring nations used them for rowing galleys. Later, captives were used for workmen and scribes and teachers.

After the invention of the sail and of improved mechanical appliances, wars to obtain captive individuals were generally abandoned and the adjoining nation as a whole was considered as the national natural resource. Such vanquished or intimidated nations were originally forced to pay annual tribute, but the amounts so collectable were found insufficient; the nations were made provinces and taxes collected from individuals; if the individuals had not sufficient property, head or house taxes were imposed payable in produce, a practice still obtaining.

(See for example report, Sept., 1923, of Commission on Permanent Mandates on the branding, massacres by bombing from airplanes, of Blondel Hottentots, to collect dog tax.)

But the most profitable way of all by far was found to be by control of the trade of the vanquished or intimidated nation; and this was applicable to colonies as well, the nation or colony being prevented or intimidated by force or financial pressure from developing any industry which would compete with the industries of the more powerful nation, or of engaging in the transportation of its own exports or imports; and thus controlled and prevented from developing, was easily kept in subjection and was supposed to form a valuable natural resource of the dominant nation. As this erroneous idea is still held by statesmen and financiers generally, there have been innumerable wars between nations to obtain possession of each others subject nations or colonies.

Q. Does not such dominance by the more civilized nation promote the development of the less civilized?

A. Comparison between the development of undominated or freed nations, e.g. Japan and the South American republics, and the development of dominated nations shows that the former lag little, if at all, behind the rest of the world, while the latter make little or no advance.

Comparison between the relative development of the dominating and dominated nations at the time of intimidation and the relative development at the present time shows that the dominated nations are now relatively less developed.

Q. If a nation does not produce indigo or sugar or nitrates or oil, must it not conquer some nation which does produce indigo, or colonize some country which produces sugar, or dominate some nation which produces nitrates or oil?

A. This was formerly thought to be so, but nations which desired these products and were not strong enough to take the producing countries away from the nation which held them, found that it was not necessary to maintain armies and fleets to obtain indigo, but that refuse from the nearest gas works dump could be turned, not only into better and cheaper indigo, but also into thousands of other valuable dyes, with new properties, which have opened up great fields in medicine, and science and industry generally; that the nearest farm grew beets which could be developed till their juice carried more sugar than the sugar cane, and at less cost; that nitrates could be obtained by sticking two wires close together and passing a current between them or by passing oxygen freed air over a catalyst. The total cost to date of these three developments is less than the cost of a single scout cruiser. There are literally hundreds of plant industry engineers who are capable of working out processes for producing fuel alcohol at a cost much less than gasoline is now selling for, and the total development cost would be less than that required to maintain one battleship in commission for three months.

2. AMBASSADOR COLONIES; MINIMUM HYSTERESIS TARIFF

The catechism goes on to explain that:

9. Trade between nations is a great incentive to progress, because by it people are led to desire other things. Unless they see the better things used, they are satisfied as they are and do not progress.

10. But this incentive to progress is best provided by creating improved means of communication and. by "ambassador colonies," i.e. colonies occupying areas of say one one-thousandth of one per cent of the area of the country to which they are accredited, and considered in every respect, except that the area is rented and not owned, as a part of the country sending it. These would be permanent expositions, would be attractive places to visit, would receive ideas as well as give them, and greatly increase trade.

11. As they would be in effect hostages, they would be an insurance against sudden and unprovoked declarations of war.

12. But every nation should place itself in a position to make everything it requires within its own territory. A "minimum hysteresis" tariff-bounty should be imposed on all imports, diminishing by one-tenth each year, the proceeds of the tariff to be applied solely as bounties to encourage the development of home production. As the home production in the first years will be only a few per cent of the importations, the cost to the consumer will be raised only a few per cent, so will not check importation, while the bounty received by the manufacturer may be one hundred per cent or more, and will be automatically adjusting to the circumstances. For details of application see chapter on MINIMUM HYSTERESIS TARIFF BOUNTY. Nations unable to do this should combine.

13. The tariff being used only for stimulating production, the expense of running the government will be obtained from a sales tag, that being the only sensible form of taxation, as taxation should obviously be on what a man spends for his personal uses and not on what he saves; since what he saves obviously and necessarily goes to others.

3. LABOR AND CAPITAL

14. Labor never has, and never can, produce anything appreciable. If labor could, there would be no unemployment, for the laborer is still there. It is capital which produces, and we can conceive a situation where production is a maximum and yet no laborers are used; e.g. if the wireless governed apparatus developed by Shoemaker and used for steering torpedoes by the Japanese at the time of the Japan-Russian war (and recently by the U. S. Navy to steer battleships) were applied to manufacturing.

15. It is the capital spent on the machinery which enables a workman to weave as much cloth in a day as a thousand could with the old loom. The laborer's share, as a laborer, is only a small fraction of one per cent of the production.

The true basis of the workman's claim comes from the fact that, as a citizen, he is entitled to his proportionate share of the capital, i.e. the savings, which have been handed down by the generations prior to his time.

4. SALES TAX; PERSONAL USE TAX

17. If in the past savings had been taxed out of existence, and spendings not taxed, there would be no mechanical or financial tools, no monetary head (analogous to hydraulic head) and no possibility of production, and everyone would be living on acorns and the like.

18. As everything not spent for personal use. becomes capital, and capital is merely another name for "means for producing," and as the more there is produced the more there is to divide around, it is obviously supremely silly to place any taxes on increase of capital. If anything, it is to the workman's interest that it should be given a bonus.

19. A sales tax places the cost of government where it belongs, because it is in respect to what he applies to his personal use that he obtains the benefit of the government. In

respect to what he saves he obtains no benefit from the government, but the nation receives a benefit from him.

20. A sales tag is the simplest of all taxes and the expense of collection is less than five per cent of the cost of collecting an equivalent amount from income tag.

21. In history we find that the income tag and the secret police are the two means invariably used by those who have overthrown popular governments and made themselves dictators.

5. AMOUNT OF DIVIDEND CAPITAL SHOULD EARN

22. At the present time capital is shirking its work and loafing, because if it does its full work it will be taxed out of existence. Assume a shop with ten machines of such types that they will build machines of everyone of those types. Then (I have been shop superintendent and also estimator) in a year they may be capable of turning out thirty such shop equipments. Deducting a suitable amount for the material, building, etc., that tool capital has turned itself over more than twenty times. A fair estimate for a proper return on tool capital is then 2,000 per cent. We may therefore say that tool capital which does not earn 1,000 per cent per annum is loafing and is not being used efficiently.

23. Loafing capital should be heavily taxed, because the nation as a whole, and the workman in particular, is not getting the benefit of it. The amount of the return which would be earned will depend upon the class of production; but as a tentative regulation, no dividends from capital paying less than 200 per cent should be applicable to the personal uses of the shareholders, on the ground that the capital is not being efficiently used. This would make for better management. All books should be permanently open to the public through the Data department referred to below.

24. The saved capital of each generation should come back to the commonwealth, and as death dues in their present form are very destructive to production, this should be arranged by taking five per cent of the amount left, for twenty years, the amount being applied to, and forming the source. of, funds for permanent public improvements.

6. THE CAUSE OF UNEMPLOYMENT AND THE NECESSITIES OF A SATISFACTORY SOCIAL ORGANIZATION

25. The fundamental cause of unemployment is the fluctuation in the yield of farm products. A poor crop year affects the railroads, the steel industry, foreign trade, etc., and throws everything out of balance. This is the great obstacle in the way of any satisfactory social. organization.

26. A second necessity is a means for storing power cheaply and efficiently. If we had this we could make use of the radiated energy from the sun. This was first measured by Langley, and later by Abbott, and in the Times for Sept. 8th, 1910, I have given the average annual radiation for different localities. It amounts to nearly double the horse

power of Niagara Falls per square mile and approximately 15% is available, if it could be stored. This would make us independent of coal.

27. A third necessity is improved means of communication. Progress is due to definite desire, and if we do not see we do not desire, except vaguely.

7. DEVELOPMENT THE WORK OF A FEW INDIVIDUALS- LIST OF EDISON'S INVENTIONS

28. How can these necessary developments be obtained. The most astonishing thing in history is the fact that all development has come from a very small group of men. Take for example Edison, as the result of whose work we have:

- The incandescent electric light, both carbon and metallic filament.
- The system of electric distribution, including central station and underground conductors.
- The carbon microphone transmitter, without which the telephone receiver, which was invented by Gray, would never have developed into our present telephone system.
- The moving pictures.
- The phonograph.
- The method of making cement which has made its use practical for modern construction work.
- The Edison hot cathode valve, which is used in all radio sets and is the basis of DeForest's great invention, the auction amplifier.
- The Edison storage battery.
- The mimeograph.
- The Edison duplex and multiplex telegraph systems, etc., etc.

By placing oneself in imagination in a city which has none of these, some realization of the extent to which development depends upon the work of individual men may be obtained. The list of Stephenson 's inventions is equally instructive; and those of other inventors.

H. PROOF THAT INVENTION IS NOT A PRODUCT OF THE TIMES BUT OF THE INDIVIDUAL

29. It is sometimes said, by those who have not studied the history of inventions, that inventions are not made by the individual inventor but are the product of the time, and that if one man does not make them another will. Now the first phonograph was made of two pieces of thin sheet metal, one wrapped round a cylinder, the other fixed and with a point fastened on it. Any one of Tutankamen's mechanics could have made it in a few hours. But what good did it do Tutankamen to know that if his mechanic did not invent it Edison would. I happen to know just how the phonograph was invented, for shortly after I came with Edison I had the luck to work out some minor but bothering details in a way which pleased him and saved his time for more important problems, and took the opportunity to ask him about it. In the course of some other work he had run a strip of embossed paper under a thin disc which had a point fastened to it and had noticed that it

made peculiar noises. I suppose thousands of Tutankamen's mechanics had run rough things across the diaphragms of drums and tom-toms and noticed that they made peculiar noises without thinking any more about it. But to Edison it conveyed the suggestion that if he were to reverse the process, i.e. talk to the disc while a smooth piece of paper was being run under the point, he would have a reproducible record of what he said. He tried it, and it worked. "Yes," said Batchelor, his old partner, who had come up and was standing by as we talked, "you can bet I was scared when I heard that thing say 'Mary had a little lamb,' when he turned the crank." Batchelor had very distinct and painful recollections, for he had bet Edison twenty-five dollars that it would not talk.

Note. No one has told of the first moving picture. It was made by Edison in 1888, in an old wooden shack, near the present ore-milling building. It was a talking movie; the office boy danced a clog and whistled and sang. The light for taking and re-producing was from a large battery of condensers, the gap geared to phonograph and film. There was no flicker, and I have never seen a better moving picture.

9. PROOF THAT INVENTION IS NOT THE RESULT OF KNOWLEDGE OR OF FACILITIES

If it be objected that Tutankamen's mechanics, though they built penny in the slot machines and made better carriage wheels than we do now and made speaking tubes for the oracles, had no scientific knowledge of sound, it is easy to prove that this was not the cause of their failure to invent. For, during more than a century before Edison, eminent physicists engaged in the study of sound, Duhamel, Koenig, Helmholtz, to mention a few names, had been using the vibrograph, which was a diaphragm carrying a point, resting against a cylinder carrying a strip of smoked paper (i.e. the Edison phonograph exactly, except that the paper was smoked), to *record* the sound waves, *but it never occurred to one of them to run it backwards*. They must have discovered it through running it back accidentally if they had not been too much concerned with the injury to the lamp black record to listen to the sounds it made.

Here then we have had, for more than a century, eminent physicists, studying the subject of sound, and having actual phonographs in their hands and using them to record the speech vibrations, without it ever having occurred to one of them that by running the apparatus backwards they could reproduce the speech. On the other hand, Edison hears once the peculiar sound made by a rough strip of paper, and immediately builds the apparatus, and while it is building bets his partner that it will talk.

30. I have gone into this in detail, and have also called attention to the fact that inventors make not one, but many inventions, because we cannot intelligently plan for development of our civilization until we realize that neither scientific knowledge nor the possession of facilities for inventing, nor the desire to invent, imply in any way the least ability to invent; any more than a knowledge of sound and the possession of a piano and the desire to compose is an index of musical ability; or a knowledge of metallurgy, possession of machine tools and the desire to make things implies that a man is a good mechanic. Each man has his own ability and whether one is more important than another is a matter of no consequence, and depends upon circumstances; the point to grasp is that the abilities are distinct; the problem to solve is, how can we best obtain the developments needed.

10. DEVELOPMENT NOT OBTAINABLE BY ORGANIZATION - THE DARK AGES THE RESULT OF OVER-ORGANIZATION

31. A patent medicine for everything nowadays is organization. But history tells us that this is not the solution, that on the contrary what we call "Dark Ages" have in every instance been caused by over-organization; and that the innocent barbarians who are always blamed only came in afterwards and are in fact the parties to whose credit the subsequent renaissances should be placed. For full discussion, see chapter on "THE DARK AGES THE RESULT OF OVER-ORGANIZATION." The explanation is, in part, as follows:

II. THE LAWS CONNECTING DEVELOPMENT AND ORGANIZATION

32. The law connecting organizations and development is that *"No organization engaged in any specific field of work ever invents any important development in that field; or adopts any important development in that field until forced to by outside competition."* E.g.

- a. The telegraph companies did not invent the cable; and after the cable had been laid continued their effort to build land lilies via Alaska.
- b. Neither telegraph nor cable companies invented the telephone; they turned it down when offered to them for \$250,000.
- c. Neither telegraph nor cable nor telephone companies invented the wireless telegraph; they turned it down when offered them.
- d. Neither telegraph nor cable nor wireless telegraph companies invented the wireless telephone; they turned it down when offered them.
- e. The gas companies did not invent the electric light; and rejected it when offered.
- f. The horse car street railways did not invent the electric railway, and rejected it when offered.
- g. The steam engine companies did not invent the steam turbine or the internal combustion engine and rejected them when offered.
- h. Neither the electric nor the turbine nor the shipbuilding companies invented the turbo-electric drive; the chief engineer of the principal electric company reporting that "electricity could never be used except as an auxiliary on ship-board."
- i. The electric companies did not invent the high frequency alternator, and when persuaded to make one up, returned it with the statement that it could never be made to operate satisfactorily above 10,000 frequency.

j. Neither the Navy Department nor the ship building companies invented the wireless compass or the echo continuous sounding machine; and they rejected them when offered.

k. Neither the wireless companies nor the Navy invented the radio telescope; and they rejected it when tendered.

So far as is known there are no exceptions to the above rule, and it is evident that *There is less prospect of obtaining development in a given field from organizations engaged in that field than from any other conceivable source.* Such organizations are very useful for minor economies, such as standardizing parts, etc., but waste many times what they save in this way through maintaining obsolete methods, and can only remain in business for extended periods by establishing monopolies through financial or political connections. When such monopolies are first formed they are prosperous for a time, as they can obtain men who have been trained outside, but when this source is exhausted they fall into difficulties.

12. TOTAL FAILURE OF COUNCILS AND BOARDS TO ACCOMPLISH DEVELOPMENT UNDER THE MOST STIMULATING CIRCUMSTANCES DEMONSTRATED IN THE WORLD WAR

33. A second natural suggestion is that development should be directed through committees or councils. But history shows us that this method also must be unsuccessful. See chapter on "THE DARK AGES THE RESULT OF OVER-ORGANIZATION."

The recent world's war will illustrate this.

If ever there was a time when committees and councils might have been expected to make developments it was during this war. There were innumerable such councils and committees, they could pick their own membership, they had unlimited funds, and there was desperate necessity for development. Yet of the important developments made during the war, i.e.:

- a. The trench mortar.
- b. The tank.
- c. The Zeppelin wireless locator.
- d. The method of locating gun positions by sound.
- e. Gas masks.
- f. The Liberty engine.
- g. The method of locating submarines.
- h. The smoke cloud for tanks.

i. The use of oil for clearing trenches of poison gas.

j. The microphone for locating enemy mining operations.

k. The star shell.

l. The method of routing transports to avoid submarines, by which 2,000,000 men were carried to France without loss.

m. The mines of the North Sea barrage.

not one of these is to be credited in any way to any of these committees or councils. All were the work of individuals, not connected in any way with the committees and councils.

13. HOW EDWARD VII GAVE INSTRUCTIONS WHICH RESULTED IN THE INVENTION OF A DEVICE FOR ADVANCE WARNING OF ZEPPELIN RAIDS

34. Note. There is one thing which I should like to tell here, out of respect to the memory of the late king, Edward VII, and that is that a good many of the citizens of London owe their safety during the Zeppelin raids to him, though he was dead. If it is not told here it never will be, for it is buried in a report in the files of the War Office. Early in 1910 Major E. G. Godfrey-Faussett called on me at my rooms and informed me that he was one of the king's aides, that the king was interested in the problem of communicating between artillery batteries in action, and had asked him to call on me and ascertain if I could suggest a suitable system, and if not, if I would take up the matter. With the aid of Major Godfrey-Faussett's instructions and information I worked out a good system, using the loop direction finding antenna shown in the first figure of my patent of Jan. 14th, 1907. While testing it I noticed that the position of aeroplanes could be determined very accurately with two such loops. Owing to the king's death, nothing more was done at the time, but when the war broke out in 1914 my brother Trenholme and I naturally volunteered, being sons of the founder of Empire Day, Mrs. Clementina Fessenden, with the Canadian Contingent. He was offered a commission, but later, when some of the men got a little out of hand he was asked to take over the work of sergeant major, he having qualifications for handling such situations. I was turned down on the excuse of age and shipped over by General Hughes with a letter of introduction (Aug. 18th, 1914) to the War Office and to the Admiralty, that to the latter not necessary, as Admiral Hood was an old friend and had taught me to play golf. Before leaving I made arrangements for manufacturing a large number of aeroplanes for delivery May 1st 1915, and took with me the specifications for my method of locating gun positions by sound and what I called "King Edward's method" of locating aircraft. These were laid before the War Office and at its request further memoranda were drawn up; but permission to test them at the front could not be obtained and in December the Admiralty wished me to return to the United States in connection with some of its work there. But later on the "King Edward method" of locating aircraft fell into the hands of some enterprising officers of the War Department and they made good use of it during the Zeppelin raids. The Germans, not knowing how to use the loop of figure 1 of the Jan. 14th, 1907, patent, used the star of

figure 2, which necessitated the Zeppelin commanders sending out signals so that the star stations could give them their positions, and the officers referred to were able to locate the Zeppelins and plot their courses long before they reached England, and so give warning in ample time and let our own aircraft know where to look for them. If it had not been for King Edward's request the matter would never have been taken up and the apparatus never developed, and it seems as if this should be known.

14. THE NAVAL ADVISORY BOARD AND SUBMARINE BOARD DIRECTLY RESPONSIBLE FOR SUBSTANTIALLY THE ENTIRE LOSS OF SHIPPING DURING THE WORLD WAR

35. Unfortunately the operations of these councils and committees were not always merely futile; so far as can be ascertained they were in most cases positively harmful, sometimes extremely so. E.g. they were responsible for substantially all the losses from German submarines during the war. The documents referred to in what follows are in the files of the Navy Department. The history is as follows:

In Sept., 1914, a pair of oscillators for signalling between submarines, with the double commutator attachment for detecting the position of hostile submarines, was brought to England and tested at Portsmouth. The signalling tests were very satisfactory and a considerable contract was placed with the company owning the patents (in which company and patents the writer had, and has, no pecuniary interest). Efforts to obtain a test of the detecting device were not successful, the danger from submarines not being considered very great, but the detecting apparatus was left at Portsmouth in case it should be decided to make a test later. During 1915 and 1916 a number of boards and committees passed on requests for tests, and on April 24th, 1917, Admiral Grant learned of these requests and ordered an immediate test. This took place at Newport, April 26th, and 28th, and submarines were in every case successfully detected up to three miles by commutator and up to one mile by echo. See official report No. 86, May 1st, 1917.

Admiral Grant then sent listening crews to Boston and arranged for other tests there, detailing two small steamers and two submarines for the purpose, and when it was found that the listening crews had no difficulty in detecting the submarines, arranged for a conference at Washington between Admiral Benson, Admiral Lee, Captain Gaunt and myself, May 15th, 1917; at which the writer's arrangement of picket lines of slow boats, to detect the submarines, coupled with a small number of destroyers to chase and destroy the detected boats, was approved; immediately following which was an interview with Mr. (now Lord) Balfour, who also approved the plan.

Unfortunately a Naval Advisory Board had been appointed, which had formed a Submarine Board. None of the physicists or inventors who had worked on submarine detection or submarine signalling were allowed on this board, and no information as to what was being done was permitted to reach them. The board's first action was to take away the boats detailed by Admiral Grant, and all other facilities for training the listening crews; and to notify the writer and others who had worked in this line that they would not be expected to go on board the boats.

About a week later the Submarine Board made a report that the method was of no use for detecting submarines. No information could be obtained at the time, but about six months later it was learned that the board had attached the two oscillators to the sides of a submarine, not realizing that, as the stiffness of the oscillator diaphragm and of the submarine side were about the same, they would both move together and produce no sound.

On learning this, the cause was explained to the board, and application made for another test. The application was rejected. Later, through the kindness of a Navy officer it was learned that the rejection was based upon some mathematical formulae relating to long waves in water; on examining which it was found that the board had not understood what the formula meant, and it was explained to the board and a third request made, which was rejected.

An offer was then made to the Navy to install a set of the detecting apparatus on the Aylwin, at private expense. This was done, but when it had been installed the board refused to permit it to be tested and ordered the Aylwin to leave Boston, Nov. 12th, 1917. By communication with Washington, the Aylwin was held in Boston and two tests, completely successful in every way, were made on Nov. 13th and 14th, in one test the Aylwin being on top of the submarine six times in the hour from distances up to four miles.

The board then, without informing the inventor, removed the commutator and some other parts from the Aylwin, and held her from going abroad during the month of December.

In response to a telegraphic inquiry from Admiral Benson, the captain and first lieutenant of the Aylwin and the captain of the submarine which was chased unanimously reported that if a destroyer equipped with the apparatus could get within two miles of a submarine the chances were even that the submarine would be destroyed; and in reply to Admiral Benson's inquiry as to whether they would consider it advisable to equip twelve destroyers with the apparatus, replied in the affirmative, and recommended that the Aylwin leave immediately for European waters.

The board telegraphed their disapproval of these recommendations, and on Admiral Benson directing the Aylwin to proceed to European waters, removed other parts of the apparatus and installed some of their own apparatus through a hole which they cut in the bottom of the Aylwin. The Aylwin got away in January, without commutator, as it was not known that it had been taken off; on arriving at Portsmouth an Admiralty test was arranged for, but on starting test the board's apparatus tore a hole in the bottom of the Aylwin, stopping test and necessitating docking.

Nothing was known of this until after about six months, and then another installation at private expense was arranged for. This was hardly completed before the armistice was signed.

In 1919 the apparatus was tested out on a United Fruit boat and found capable of detecting up to a distance of twenty-two miles. The losses from submarines amounted to approximately one million dollars per day, which would have been saved had there been no board. It is perhaps needless to say that none of the board's apparatus ever worked, for we have had hundreds of university laboratories, with hundreds of millions of dollars of equipment, for many years, and while their research work has been valuable, the total development or invention output to date has been substantially nothing; less than many an inventor's shed with its equipment of hacksaw, files and lathe.

36. Some possible mis-apprehensions may be forestalled.

a. The writer has never had any communication of any nature with either the Naval Advisory Board or the Research Council, and does not know even the names of the men on them. The facts stated are given without bias, and because the facts themselves, and the study of history, show that such organizations are a menace to civilization. I would much prefer to omit all mention of them, but it is proposed to indicate the remedy, and this cannot be done without first diagnosing the character of the schlerosis.

b. The Admiralty were in no way negligent in regard to submarine protection and made a number of attempts to get in touch with American inventors; but were blocked because the Submarine board secured a formal order from Secretary Daniels, who was fully informed of all the circumstances, that all communications with reference to submarine detection matters must be carried on through the Submarine board. (Secretary of Navy's order of June, 1917.) The Admiralty could therefore not find out what American inventors were doing, and the inventors could not get their apparatus tested.

And this notwithstanding the fact that most of the inventors offered their inventions to the government without compensation during the period of the war; while some members of the board received considerable sums for their defective devices; even in cases where e.g. the electric wave compensator interference proceedings in the Patent Office, they had attempted to patent, as their own, devices sent in to the board by outside inventors, not knowing that applications had been filed by the inventors prior to the sending in.

c. At no time was there any abandonment, notwithstanding the apparently impregnable opposition from the board, of the determination that the troop ships must be protected from submarines. The essential parts of a sufficient number of sets of apparatus were prepared, and had news been received of the sinking of a single troop ship, within a few hours the data in the case would have been before Congress and the apparatus on board the destroyers ready to install. But the Edison system of routing was working well and continued to work perfectly until the end of the war so the emergency measure was never taken.

15. EDISON AS A MATHEMATICIAN- THE EDISON SYSTEM OF ROUTING CONVOYS DURING THE WORLD WAR

With reference to the Edison system of routing the convoys, Edison is a natural born mathematician and never undertakes anything without first securing sufficient data. One

time, in the early days of the electric light, owing to an injunction, he had just two weeks to get out a carbon filament which should be structureless, in order to prevent the Pennsylvania stations from being closed. We discovered a chloroform soluble nitro derivative of asphalt which would carbonize, but when the chloroform evaporated from the squirted filaments in the carbonizing, it left them in powder form. Several hundred different solvents were put in as many small tumblers, together with a small portion of the asphalt derivative. Only one dissolved it, oil of birch. Edison, who had left me to look after the solvents while he attended to something of more importance, came into the room. It was about five o'clock and the light was just coming in; we both looked rather disreputable; he in a blue checked laboratory gown, dirty and eaten full of holes by chemicals, with a three days' beard, and a cigar in the corner of his mouth; but for all that, more grand than any emperor. I suppose I must have been rather tired, we had been at it for about a week and had been too busy to eat much, for I began to speculate on what molecular arrangements could be common to chloroform and birch oil. Edison listened for a few moments, then his eyes twinkled: "Well, Fezzy, I guess what we need is more tumblers"; and this was always his rule, to first get the data. Like Faraday, it is his natural mathematical instinct which enables him to use the data. Once Kennelly (now professor of Electrical Engineering at Harvard) and I were reading Thomson's "Applications of Dynamics to Physics and Chemistry" which had just come out, and happened to leave it open at a page which had a lot of sextuple integrals while we went to lunch. On coming back we found Edison had been in to look for us, and across the top of the page "This inscription was found written on the door of an ancient Aztec lunatic asylum." But when, some years previously, the size of the neutral of the three wire system had come up, and the mathematicians had failed, he solved it himself and his results stand today. And when the United States entered the war and before the Advisory Board had time to throttle his work, with the assistance of some of the Navy officers he got together all the data on submarine sinkings, deduced from them the conditions under which the submarines were able to operate, and laid down a system of routing which got the whole 2,000,000 troops across safely. This was all he could do before the Board was formed, but it was enough. A list of 45 of his inventions "which were suppressed by the Board" was published by the Brooklyn Eagle, Feb. 16th, 1923 (discovered in the files of the Board by Lloyd N. Scott). Many of them would have been of great value to the allies, and have materially reduced the cost of the war.

16. FALSIFICATION OF REPORTS BY BOARDS, TO COYER UP FAILURE TO MAKE DEVELOPMENTS- THE LIBERTY MOTOR SIGNALLING DEVICES

37. Those who have studied the subject know that ability to do research work and ability to make developments are absolutely distinct, and the complete failure of these boards and councils to accomplish, in spite of the immense sums of money spent, any development whatever, was only what was to be expected. But the necessity of covering up this failure has led to a remarkable and extensive falsification of their public reports, against which the student of economic' history should be warned, because these falsified reports may be used to obtain further development throttling powers from Congress. E.g. the development of the Liberty motor was extensively advertised as an accomplishment of one of these bodies. It was really due entirely to one of the engineers of the Packard company, and had been already built and tested. The whole business of the reported

development was a concoction, the only changes made were some minor ones in lubricators, etc, which were later found to be inadvisable.

Another example is the patenting of signaling devices, communicated to them officially, by Signal Corps officials, forced to such action by the necessity of showing some result for their expenditures.

17. THE FAILURE DUE TO THE ORGANIZATION

It may be claimed that such deplorable happenings are not due to the system but to the men. But this is not so; for example the writer has had business dealings with the Navy Department for twenty years and during all this time has never known or heard of any action of any officer which was not strictly honorable. But with the Boards this is not so.

18. OTHER FALSIFICATIONS; THE ECHO SOUNDING APPARATUS THE HOT CATHODE RECTIFIER AND AMPLIFIER

The recently advertised development by a Navy board of apparatus for taking soundings by echo is a complete falsification. The apparatus was invented and used in 1914. The following is an extract from the reports of Captain Quinan, of the Miami, iceberg patrol, published in the Hydrographic Office Bulletin, May 13th, 1914.

"We stopped near the largest berg, but though within 150 yards, obtained no echo from the steam whistle. Professor Fessenden, with his oscillator, placed 10 feet below the surface, obtained satisfactory results up to two and one-half miles. These echoes were not only heard through the receivers of the oscillator in the wireless room, but were plainly heard by the officers in the wardroom and engine room storeroom below the water line." "The accuracy of the method for sounding was tested at depths of 750 and 1,250 fathoms, and the results agreed with the depths given on the chart." "On the morning of April 27th, anchored in 37 fathoms of water and made tests with oscillator to determine by echo the depth of water; the result giving 36 fathoms, which seemed to me very close." The sounder was tendered to the Navy a number of times between 1914 and 1920, and was used by the United Fruit Co. in 1920, to run several lines of soundings between Boston and Panama and other southern ports. The Board then tried to use the method without an oscillator, and not succeeding, obtained one in some way and after making some satisfactory tests, sent out accounts of these accompanied by a statement that the apparatus had been invented by the board. Even now the apparatus is much inferior to what might have been obtained outside the board, for in 1920 a later development of the inventor's 1914 apparatus, simpler and cheaper and giving continuous depth readings on a dial on the bridge, was tendered and refused.

In the annual report for 1920 of one of the boards is the statement that it invented the hot cathode amplifier. The hot cathode rectifier was invented by Edison, who used it for rectifying high frequency oscillations (Edison U. S. pat. no. 307,031, Oct. 21st, 1884; Trans. A. I. E. E. Oct. 1884). The use of potassium vapor and cathodes covered with alkaline earth oxides was invented by the writer in 1905 (U. S. pat. 915,280; Feb. 8, 1907). The extremely important invention of placing an anti-cathode between the anode

and cathode was made by DeForest (U. S. pat. 836,070; Jan. 18, 1906). The anti-kathodeless amplifier and generator (originally believed to be a thermal but now known to be a magnetic effect) and the hot cathode light cell with barium-calcium coating were invented by the writer (U. S. pat. 1,133,435; Feb. 9, 1914). No board had any part in any of these inventions.

19. THE INVENTION OF THE WIRELESS TELEPHONE- THE FIRST TRANS-ATLANTIC TRANSMISSION OF SPEECH

No less than three different government boards and one outside corporation have announced that they were the inventors of the wireless telephone, and one of them has claimed to be the first to transmit speech across the Atlantic; all of which is fabrication. The history of the development of the wireless telephone is given in the patent office records and in the Trans. Am. Inst. E. E. July, 1908. Speech was first transmitted wirelessly in Dec. 1900, at Cob Island, Aid. In 1903 an exhibition was given to engineers in Washington, D. C., and Annapolis, Md., of apparatus capable of transmitting 25 miles; and the engineers gave affidavits to that effect. Apparatus guaranteed to operate 10 miles was tendered to the U. S. Navy in 1905, in the following letter:

"U. S. Bureau of Equipment, Navy Department,

Washington, D. C. July 8, 1905.

Sir:

We have been advertising wireless telephones for some time, and on several occasions during the past year have offered to supply your department. During the course of our recent conversation I learned that these tenders had not been noted.

We have also on various occasions during the past two or three years tendered other apparatus and it is possible that these have been overlooked.

A list is therefore subjoined of various types of apparatus which we are prepared to furnish your department in lots of 25 or more:

1. Apparatus for measuring wave lengths accurately to 1/4 per cent.
2. Apparatus for wireless telephony up to a distance of 10 miles or more.
3. Apparatus for wireless telegraphy for use up to distances of 1,000 miles.
4. Apparatus for secret sending, guaranteed to send and receive messages without possibility of their being read by other vessels not equipped with this apparatus.
5. Apparatus for locating the position of ships at sea at all distances within 200 miles of shore.
6. Apparatus for indicating the position and course of ships in fog within range of 3 miles.
7. Apparatus guaranteed to prevent interference. Respectfully,

REGINALD A. FESSENDEN.

Forty or fifty sets of type three and two of type seven were some years later purchased, passed the tests for guarantee, and were paid for. The use of the others was not approved, though operation was guaranteed. This letter is given in full as the extent to which developments are held back is not generally understood. After 18 years some of the above are not yet in use. E.g. the method of locating ships in fog and of preventing interference.

The transmitting had so far been done with the continuous wave spark generator (U. S. pat. 706,741; Nov. 5, 1901, and 706,742 and 706,743, Aug. 12th, 1902; 730,753, Apr. 9, 1903) the method used being that of U. S. pat. 706,747, Sept. 28, 1901. Orders had been placed for two high frequency alternators in 1905, at my expense and risk, but the electrical company finally shipped them with a letter stating that in their opinion they could never be operated above 10,000 frequency. Discarding everything but the pole pieces I redesigned them, operated them, first at 70,000 and then at 100,000 cycles, designed and built a new type (which was later still further improved and constructed in large sizes by Dr. Alex Anderson) and on Dec. 11th, 1906, invitations were issued to Dr. Kennelly, Elihu Thomson, the engineers of various telegraph and telephone companies and the editors of several technical papers to be present at a test at Brant Rock and to witness the working of wireless and wire lines in conjunction, and broadcasting music and speech. (See Trans. Am. Inst. E. E. July, 1908.) A report of the demonstration will be found in the American Telephone Journal, Jan. 26th, and Feb. 2, 1907. In the same month speech was first transmitted wirelessly across the Atlantic, to my Machrihanish station, on several occasions. A full account of this will be found in the Scientific American for Sept. 7, 1918. "The First Transatlantic Wireless Transmission." the power used being 750 watts, frequency 70,000, height of masts 450 feet; no amplification was used, though amplifiers giving 900 amplification were available (see London Electrician, July 5, 1907), as none was needed. Regular working was established between Boston and New York (Brant Rock and Brooklyn) and later to Washington, D. C. In 1908, as the result of a year's investigation by the engineers of the Amer. Tel. and Tel. Co. contracts were drawn up for the introduction of the wireless telephone system into the long distance field by Mr. F. P. Fish, president of that company, but these were disapproved by his directors, and Mr. Fish, under whose administration the telephone service had been brought from an unsatisfactory to a wonderfully efficient state, shortly afterwards resigned.

20. STILL OTHER FALSIFICATIONS- THE WIRELESS DIRECTION FINDER- THE EXTRACTION OF HELIUM- FUME PRECIPITATION- ULTRA-AUDIBLE SOUND WAVES- TURBOELECTRIC DRIVE

Three different boards have come before the public as having invented the wireless direction finder, but none of them had anything to do with it or made any improvement. The history will be found in German pat. 225,256, Jan. 14th, 1907; and in the London Electrician, Dec. 19th, 1919.

Other similar misrepresentations by boards and councils relate to the extraction of helium from natural gas, the method of drying wood for aeroplanes, the use for extracting fume dust by the charged electrostatic plate method used for so long in lampblack manufacture, ultra-audible sound waves, etc.

The turbo-electric drive for battleships has been the subject of similar misrepresentations. It was first laid before the U. S. Navy in 1900. Turned down, the matter was taken up with an electric company in 1901, which did not approve, but later got out a design for an auxiliary drive. Taken up with the Navy again, it was turned down by three boards, and finally attracted the attention of Meyer, then assistant secretary, who, after going over the figures, offered the use of one of the scout cruisers if I could persuade any electric company to take it up at its own risk. The electric company was approached again, but its chief engineer wrote me a letter stating "electricity could never be used on shipboard except as an auxiliary." After some further discussion of figures, another conference was had, at the end of which Mr. Rice stated that he was prepared to go ahead; and Meyer and Rice made the turbo-electric driven battleship the big success it is.

21. FALSIFICATION OF HISTORY BY BOARDS- THE ATTEMPT TO DISCREDIT THE WRIGHT BROTHERS AS THE INVENTORS OF THE AEROPLANE- LORD NORTHCLIFFE'S COMMENT

In the propaganda to cover up their failure to make any developments and to cover up the essential distinction between research work and invention, these boards and councils have not stopped at the attempted appropriation of the work of inventors, but have attempted to discredit that work. A recent example of this is the attempt to show that Langley invented the aeroplane, and not the Wright brothers, and that Langley's aeroplane would fly. The Langley machine was shipped to Hammondsport, N. Y., and on its return was mounted in the U. S. National Museum with this inscription:

The Original Langley Flying Machine, 1903.

The first man-carrying aeroplane in the history of the world capable of sustained free flight. Successfully flown at Hammondsport, N. Y., June 2, 1914."

The knowledge that this statement was completely false excited the indignation of one of the members of the Royal Aeronautical Society, Mr. Griffith Brewer, who, at the proceedings of the Society, Oct. 20, 1921 (see Aeronautical Journal, Dec., 1921) brought out the fact that:

The machine tested at Hammondsport differed from the Langley machine in the following respects:

- a. The wings were of different area, different camber and different aspect ratio.
- b. The system of wing trussing, which in the Langley machine had always failed, was completely changed at Hammondsport.
- c. The large keel surface of the Langley machine was altogether omitted.
- d. The original Langley propellers were superseded by a modern propeller, based on knowledge not possessed by Langley.

e. A system of lateral control unknown to Langley was added. The dihedral angle of the wings on which Langley relied entirely for maintaining lateral balance was supplemented in the Hammondsport machine by the action of a rudder of increased size used as an aileron.

f. The steering wheel, post and shoulder yoke of a modern machine were installed complete in the Hammondsport machine.

g. The original Langley engine of 52 h. p. was first modified and then superseded by a modern engine of 80-100 h. p."

Comparison of the photographs of the machine made at Hammondsport at the time of flying, and as it is now at the Smithsonian Institution, and the very frank statements of Dr. Manly (who was not present at the flying and was in no way responsible for the statements made) with reference to the change in motors, etc., substantiate completely Mr. Brewer's statements. Lord Northcliffe's comment was

"There have been long and persistent attempts to belittle the work of Wilbur and Orville Wright. I have closely read and followed the history of the hundred years of aeroplane experiments, and am convinced that the credit of the first flying machine is due to the Wright brothers, and from the point of practical flying, to nobody else."

2. LANGLEY; MAXIM ; MANLY- THE WRIGHT BROTHERS ORVILLE WRIGHT 'S ACCIDENT

And Lord Northcliffe was right. I was personally acquainted with Langley, and he did the fundamental scientific work on the problem, for prior to his time it was thought to have been mathematically proved that flying could never be accomplished, and he first showed that the inertia of the air had not been taken into account, and experimentally demonstrated by his whirling tests that there was sufficient lift for flight. This work was not done at the Smithsonian Institution nor under its auspices, but at the Allegheny Observatory, and with funds provided by Mr. Thaw. It was here also that Langley, with his able assistant Mr. Very, did their work on radiation; and that Brashear made the flats for Rowland; and that Keeler first measured the rotation of Saturn rings and planned the mapping of the sun's surface by calcium line photographs, which was later carried out by Hale. And it was here that Wadsworth revolutionized astronomical technique by designing the coelostat methods so successfully carried out at Mt. Hamilton; and that the writer had the good fortune to discover and to measure the negative electrostatic charge on the sun, which Hale later confirmed by his sun spot measurements. (See 'Astrophysical Journal, "An Electrical Theory of Comet's Tails," Dec., 1896.) All this individually and with an old yellow objective and the scantiest equipment conceivable, and in friendly co-operation. Langley would have been the very last one to attempt to take away from the Wrights the credit for their achievement, for he knew how much was still before him.

Maxim I knew well. He was the first, at Baldwin Park, to construct an aeroplane which lifted from the ground, carrying a man. But he too realized how much was to be done, and arranged so that when it rose it caught on an over rail. To Manley is due the credit of having demonstrated that an internal combustion engine could be built light enough for

the purpose.

The Wrights, Hill the mathematician, the Edison boys and myself were all down on the North Carolina sound; the Wrights at Kittyhawk with their aeroplane; I at Manteo, opposite, with the wireless telephone and the pheroscope; Hill working on the moon's inequalities; and the Edison boys shooting. When they came to Washington Wilbur promised to take me up with him, but the day we drove out for the trip we found the Army had bought the plane and the officers in charge were not willing. After the accident to Selfridge and Orville Miss Kate Wright said she could not get Orville to go to sleep; when she read to him it made him more wakeful as he got interested in what she was reading; had I not some book which would make him sleep? I said that, much as I admired Pater's literary style I had never succeeded in reading "Marius the Epicurean," so I brought it over and Orville slept. I like to think of Miss Kate, reading at night in the army hospital at Fort Meyer to Orville, while his brain relaxes and his broken limbs slowly knit together under the soothing influence of the precious Marius. Neither of the Wrights was ever slow in expressing appreciation of Langley's work; though it must be admitted that they were sometimes less complimentary to the score or so of people who came down to look at what they were doing, aired their obsolete theories, and then went away and told others they had showed the Wrights how to build their flying machine.

23. FALSIFICATION BY BOARDS A DANGER TO CIVILIZATION BECAUSE IT GIVES WRONG
CONCEPT OF METHOD BY WHICH DEVELOPMENT IS ACCOMPLISHED AND SO PREVENTS
DEVELOPMENT

The propaganda of the boards and councils, considered as an attempt to cover up their total failure of achievement by claiming results achieved by others, is of no importance; for after all, what does it matter who does the work so long as it is done. Its dangerous importance lies in the fact that by giving a wrong impression of the way in which development is accomplished, it prevents that development.

24. POSITIVE OPPOSITION OF BOARDS TO DEVELOPMENT- THE WIRELESS TELESCOPE,
CONTINUOUS SOUNDER, AND SHORT WAVE PELORUS

And it does this not only by propaganda but directly. E.g. In 1901 the writer designed an apparatus for transmitting vision by wireless which he called a "pheroscope." With this apparatus a lens is pointed at any scene and everything which is going on is transmitted instantaneously and appears on a screen, magnified in diameter, at the receiving station. It is useful for military purposes as it enables the captain of a battleship to see everything that is happening in the field of vision of an observer in an aeroplane; and also because it enables aeroplanes to be detected and followed by gunpointers at night and in fog. Also, as explained in the patent specification, by using mirrors with different numbers of faces it cuts out all atmospheric disturbances and makes all communications secret and permits of the use of low masts and loops for distant signalling.

Brashear was kind enough to make the necessary four sided mirror, and the device was tested and worked satisfactorily. It was then dropped in order to complete the development of the wireless telephone. After the demonstration to Dr. Kennelly and

Elihu Thomson and others in December, 1906, referred to above, of broadcasting music and speech by wireless telephone, a patent application was filed for broadcasting writing and pictures and speech and music, and one of the early forms of the pheroscope was described in it. (U. S. pat. 1, 105,881; Dec. 19, 1906.) A new type of light responsive cell was invented in 1913, in which the light falls on a hot cathode on which a drop of sealing wax has been incinerated. (U. S. pat. 1,133,435 ; Feb. 9th, 1914.) It was then dropped again till 1920, for, contrary to the general belief, if it is a real invention there is no danger of anyone anticipating it. The writer has hundreds of inventions in his notebooks, dating back thirty years and more, none of which have been discovered by others; and I know that Edison has the same also. Even when the general method has been published, as in U. S. pat. 1,105,881, above, there is little danger, for to invent requires exact knowledge of detail and the trouble with most people who try to invent is that they do not know when they have got the thing they are looking for.

In 1920 it was taken up again and further tests made with the old and with some new types of receiving cells, and it was tendered to the Navy Department.

At the same time two other devices were tendered, the echo sounder with continuous depth indicator on bridge, referred to above, and a new type of wireless direction finder, using short waves (thus overcoming atmospheric disturbances and the directional errors referred to in London Electrician paper of Dec. 19th, 1919, above referred to). The two latter were rejected, on the ground that the continuous depth indicator was not needed; and that the Navy preferred to continue to use the old direction finding method shown in fig. 2 of the writer's pat. No. 225,256; Jan. 14th, 1907, in spite of the writer's warnings that it was dangerous.

But an order was placed for two sets of the pheroscope apparatus, guaranteed to work 500 miles. All special material was secured and arrangements made for manufacture, but the confirmatory order did not arrive. Finally, on Oct. 20th, 1922, the following letter was sent to the Department:

Bureau of Engineering, Navy Department,
Washington, D. C. Oct. 20th, 1922.
Fessenden Radio Telescope.

Sir:

This is the apparatus for which I have your instructions to make up two sets for two communicating stations, same to be furnished to the Navy at cost of manufacture, and without any charge for my time or work. Every effort is being made to keep the cost down, so far as is consistent with perfection of operation, and the estimates so far received show that it can probably be kept below \$10,000 per set; but other estimates to come in will probably be lower, in fact it is possible that the cost may be halved.

I would suggest that you send me (and as soon as you can conveniently) an order in the following form, virtually:

Sir:

Will you please furnish the Bureau, at your earliest convenience, two complete sets of your Radio-Telescope; of the type disclosed in your U. S. pat. app. No. Price to be in accordance with your letter to the Bureau of Oct. 20th, 1922.

Signed,

Enclosed on separate sheets, for convenience of your files, are memoranda in accordance with your instructions at our last interview.

Respectfully,

REGINALD A. FESSENDEN.

To which the following reply was received:

Prof. Reginald A. Fessenden,
45 Waban Hill Road,
Chestnut Hill, Mass. Nov. 8th, 1922.

Sir

Receipt is acknowledged of your letter of Oct. 20th, 1922, enclosing brief outlines of a number of suggestions along various lines in which the Navy is interested, along with power of attorney to secure copies of the patent applications which you have filed covering these suggestions.

The Bureau appreciates the opportunity you have so generously given to investigate these works of yours, and each and every suggestion will be carefully gone into by the various personnel of the Bureau qualified to consider these subjects.

Very Respectfully,
Signed (Bureau of Engineering.)

The character of this reply will be noted. No suggestions of any kind had been made; what the writer had done was to tender apparatus, guaranteed as to performance, at cost price, not to exceed a specified amount, and with quick delivery. No reply is made in the letter to the request for a confirmation of the verbal order, though considerable expense had been incurred in getting together the more delicate parts, and though no apparatus tendered by the writer to the Navy during a period of twenty years had ever failed to pass all tests as guaranteed.

It is perhaps needless to say that nothing further has been heard in regard to the matter. Some months after receipt of the above letter, a letter was received from the company with whom arrangements to manufacture the apparatus had been made and who were also connected with the Research Council, stating that they had so much other work that they would be unable to make the sets up.

The Navy officer who wrote the letter was the one who placed the original order, but who was of course not to blame. I have learned, from another source, that he wished to place the confirming order, but was overruled by the Council, who having a full description of the apparatus and copies of the patent specifications, decided to try and make it up themselves.

The matter has been dropped in order to see how many years it will take the Navy Department and the Council to get out these three classes of apparatus, i.e. the continuous sounder with bridge depth indicator, the short wave direction finder, and the radio telescope, or pheroscope. As the sets would have been furnished early in 1922, the result so far is that the public has been deprived of the benefit of the inventions for nearly two years.

25. COMMENTS ON BOARDS IMPARTIAL- NO FINANCIAL INTERESTS INVOLVED

I have gone into this matter in some detail because it is necessary to do so. The Lord knows, for I believe he guides my work, that no one dislikes controversy more than I do. Once, while attempting to gee the submarine detecting apparatus, referred to above, tested, I said to an acquaintance who happened to be present at the meeting of the Submarine board: " Why is it they are not willing to try it. It will not cost them a cent." "Well, you know, Fessenden, ninety-five per cent of a man's time is taken up in fighting things through against other men who are trying to block him." "I know nothing of the kind; not five per cent of my time is spent that way, if it were I should never get anything done; you men are in hell and do not know it."

Nor am I interested in any way financially, for up to date I have yet to receive the first penny for any of my patents. Once I was urged to take up the matter of my wireless telephone patents, as the company which had them had made a profit of over five hundred thousand dollars in one year and was in addition drawing large royalties from the Marconi company for the wireless telegraph applications. The verdict was for four hundred and six thousand dollars and forty-five per cent of the stock, but the company had anticipated the decision and went into a receivership before it was given, the directors sold themselves the patents, and later disposed of them for five million dollars; so, as the legal expenses had been heavy I decided not to bother about such matters until the laws were amended to give inventors better protection; and have obtained the money necessary for developing my inventions by work along other lines. For this reason I can speak much more freely than if I were a financially interested party.

26. SCIENTIFIC PROGRESS THE RESULT OF INVENTION THE ELECTROSTATIC DOUBLET THEORY OF MATTER, CRYSTAL LINE FORM, NATURE OF COHESION, THE STATIC POLE ATOM, GYROSCOPIC QUANTA, TRANSFORMATION OF ENERGY INTO MATTER

The statement that inventions are derived from scientific work is seldom correct, and more often the reverse is the case. See for example the history of the phonograph, given above; or take away from science the inventions listed above under Edison's name; would it not be handicapped. The electrostatic doublet theory of matter arose from one of Edison's problems, i.e. the manufacture of a non-inflammable rubber. It was a saying of his in 1886, that "the chemistry of the future is the chemistry of colloids." To make the new rubber it was first necessary to find why rubber was elastic. The generally accepted theory, held by Kelvin, Sutherland and others, was that the attraction was gravitational and that the elasticity was due to an elongated form of molecule.

The change of volume of compounds was first investigated and found to be explainable by the close packing of similar shaped atoms of different sizes, and this was found to give the crystalline shape. Elasticity was then discovered to be a function of atomic volume, and in amount exactly what would be given if the atoms were electrostatic doublets, with ionic charges. A paper on the subject was sent to the Philosophical Magazine, but the concept was too new, and one of the editors inquired if the author did not know that electrical charges could not exist inside conductors. Fitzgerald, however, was very encouraging, and later wrote that if it were true it would account for the Michelson-Morley results. It was finally published in the Electrical World for Aug. 6th and 22d, 1891; in Science for July 22d, 1892, and Mar. 3d, 1893; in the Chemical News for Oct. 21st and 28th, 1892, and Oct. 27th, 1893; and in the Physical Review for Jan. and March, 1900. In the Electrical World for May 6th, 1893, will be found the first sketch and description of the modern electrical atom, shown as a carbon atom, with four electron negative charges at the corners of a tetrahedron and with four positive charges in the center. The fixed position of the charges was later objected to, but as the result of numerous discussions at the Mohawk Club, Schenectady, one convert was made, Langmuir, who has shown that it is quite as satisfactory as the planetary, and has greatly extended the theory. Other developments, i.e. the gyroscopic quanta and the method of transformation of radiation into matter are given in Science for April 10th, 1914, and Oct. 17th, 1913.

SOLUTION OF PROBLEMS

I. CROP STABILIZATION

To come to the solution of the problems:

A. Crop Stabilization. The solution is given in U. S. patents 1,121,722, Oct 6th, 1906, and 1,268,949, Feb. 4th, 1918, which have been donated to the public, with the exception of some claims formally necessary to permit their issue as patents.

The amount of starch grown per acre is limited solely by the radiation received; we raise 10 or 15 bushels of wheat per acre, the radiation is sufficient for more than 1,000; and some crops, e.g. cassava, give more than 500. All the wheat now grown in the United States could be grown on an area approximately five miles square, if the radiation were utilized. In the method shown, there are no weeds, no crop diseases, no drought or frost; all the work is done by machinery; the plants grow much faster and better because of the

greater amount of carbonic acid gas in the air, obtained from burning the straw or stubble; most of the inorganic salts are returned to the soil and none is lost by washing away; the growth is stimulated by the rhythmic electrification. (This rhythmic growth has been confirmed by the great East Indian scientist, Bose.) It is absurd to put the food and the employment of a nation at the mercy of the weather and insects.

Obviously the only point is comparative cost. If an acre of ground costs \$200 and 15 bushels of wheat can be raised, on the average, then if 150 bushels can be raised the land and protecting glass will stand a charge of \$2,000 per acre. Also, because of the decreased area to be plowed, etc., the absence of disease and insects, the quicker growth of the crops, the greater number of crops per year, the low cost of the work, etc., it will stand a much higher charge still.

My estimates show that at the present time crops can be raised by this method for less than one-third the present cost, including all interest on the additional capital, overhead, etc.

Its use should begin at points near cities and grow outward. The steel and glass and cement needed would give a stable load for these industries. The idea that the new construction would need large amounts of additional capital is an economic fallacy; capital is only needed in cases of economic instability; I cannot go into this now. But if considered necessary, it can be provided and unemployment meantime diminished by the method suggested some years ago, i.e. by making a minute survey, by core drills 440 yards apart, of the entire country and issuing bonds based on the ore bodies discovered, secured by the right to extract the ore in case of default. Every nation should begin this work at once, and it would be a good solution of the intermittent unemployment problem, since money paid in doles is forever lost and a charge on the community, while in this way the payments would result in large profits and the work could be carried on as necessary. A method of locating ore deposits by sound waves is given in U. S. pat. 1,240,328, April 9th, 1914.

2. POWER STORAGE

B. Power Storage. The solution of this is given in U. S. patents 1,247,520, June 7th, 1907; 1,112,441, April 4th, 1906; 1,217,165, March 8th, 1909. These also show methods of obtaining power from solar radiation; the wind; and evaporation from low areas, as Death Valley, the Dead Sea, the Caspian Sea.

In the American Electrician, May, 1898, I showed that "the best storage battery was a reservoir on a hill." Five or six years later the Westinghouse Co., with which I was at that time connected, had some South African contracts and it was arranged to try out the method there. But later I found that it was much less expensive to excavate a regular mine shaft 1,000 or 2,000 feet deep and run galleries from it, beneath some impervious strata, using the galleries for the lower reservoir, and a river or bay for the upper.

In cities the galleries would be enlarged to carry pipes, telephone and light cables, and even light freight. The construction of these galleries would relieve unemployment and give an asset.

As shown in the article in the London Times for Sept. 8, 1910, and in the Scientific American for April 30, 1921, the first cost of a plant of this type is approximately 30 cents per h. p. hour of storage capacity and the cost of storing one horse power hour for one year is approximately three cents. This makes it economical to store and use power from intermittent natural sources, such as the wind and solar radiation. The storage plants can also be used as "power banks"; manufacturers having more power than they need at one time of day can deposit power through a meter which runs in the reverse way, and draw out when needed.

It is preferably used with the writer's system of secondary distribution, in which, in place of attempting to keep the terminal voltage at the consumers' end constant within narrow limits, necessitating immense amounts of copper, the voltage is allowed to fluctuate and to drop to the most economical point, automatic regulators being used in the houses. Also, the consumers' load is kept constant by storing the power when not used for illumination or power, in porcelain or fire clay cylinders, as heat to be used as required for heating water or rooms.

The advantages of this system for a country like Japan, for example, which has much water power but very variable in amount during the year, is obvious. It also permits of power being transmitted much longer distances, by placing power storage at the place where it is used; for if the average load factor is 33%, by transmitting 33% of the power all the time, only one-ninth as much copper need be used in the transmission lines, and it can be transmitted much further economically. Southern Italy, for example, could be supplied with power from the Alps.

The method has been investigated by engineers a number of times and always favorably. The difficulty may be illustrated by the experience of one of the largest cities in the United States, which seriously considered using it in 1910. The economies were so evident that it was regarded as settled, till the matter was taken up with the Commission of Public Utilities. The Commission approved its use. They were then asked if the electric company would be permitted to pay larger dividends, and were informed that it would not. They were asked whether, if the method proved a failure, the electric company would be allowed to raise its price temporarily, to make up the loss. They said that the company would not. As one of the directors of the electric company said, "It looked to us like a case of heads we do not win, and tails we lose. I think we should have gone in for it if it had been our own business, but we had our stockholders to consider." This illustrates one of the disadvantages of over-organization, there is no incentive to make advances. When I first went into the electric business, in 1886, electricity was selling for 10 cents per kw. hour, and it sells for the same now. In my report as Engineering Commissioner to the Niagara Falls Power Commission, I recommended that the Province of Ontario should build the transmission lines and allow anyone who wished to supply power to them, or take off. This method should be used in all so-called natural monopolies.

3. COMMUNICATION- TELEGRAPHY ; WIRELESS TELEPHONE; RADIO TELESCOPE
(PHEROSCOPE); SOUND WRITING LANGUAGE;
MICRO-PHOTOGRAPHIC BOOK (PHOLOG)

C. Means of Communication. The solutions to various problems in this field are contained in some 300 patents, and may be divided into the following:

1. Telegraphy. The system finally evolved is that described in the Electrical World, Sept. 15th, 1894, i.e. "a multiplex system using sine waves, in which the operator does not make or break the circuit with the key, but puts in circuit a device which automatically sends out sine waves into the line." This was never pushed because when, in 1891, I took the matter up with a friend who was at the head of one of the cable companies, he was frank and kind enough to say, "We do not want high trafç capacity systems; we would not give anything for one. But if you can invent something which will prevent any cable from sending more than four words per minute, we will give you a million dollars for it." Which was of course sound business policy then. Since the wireless has begun to compete, the situation has changed, and the system will be used, I understand, but the patents expired long ago.

A telegraph alphabet. in which the dots and dashes are both the same length, but different frequency, was devised U. S. pat.1,170,969, Dec. 23d,1907.

A large number of wireless telegraph inventions were made, most of which are in use, e.g. the heterodyne, continuous wave generation, the wave chute, the large capacity antennae, compressed air condenser, suspension insulator, loop antenna, direction finder, aeroplane height indicator, high frequency dynamo, vacuum tube producing continuous oscillations sustained by its electric or magnetic field (U. S. app. 222,301; Aug. 26th, 1904), those mentioned in IV; 18; etc., etc.

2. Telephony. The wireless telephone, U. S. pat. 706; 747, Sept. 28,1901; now in general use; and many improvements, and methods for using with wire lines and broadcasting.

3. The Pheroscope or Radio Telescope. For transmitting scenes and moving pictures. Not yet in use as no demand at present. When it comes into use it will also enable wireless telephony to be used for telephonic intercommunication in cities, in place of present exchange system.

4. Sound writing language. A language in which the tracings made by a point on a, diaphragm may be read directly by the eye, as well as reproduced phonographically. This will eliminate the necessity of writing by hand or typewriter and serve as a. universal language. U. S. pat. app. no. 358,078, Feb. 18; 1907.

5. The Micro-projection book and moving pictures. Made from two quartz discs, one sixteenth inch thick and an inch and a quarter in diameter. The book is photographed on one of them, making a platinum positive, and then fired. The second disc is laid over the first, under light pressure, and heated, when, as discovered by the engineer of one of the British optical companies, the two unite to form a single piece of quartz. The photograph is made with a reduction of about 250 times, and five or six ordinary books may be contained on a single disc, and illustrated in colors. It is read by dropping the disc in the slot of a small projector attached to the arm of a chair, or on a desk, and having a small daylight screen, about twice the size of the page. The method will be of much use for law

and other libraries, and for data collections. The pages are turned by pressing a button, which, in the case of encyclopedias, turns the disc to the desired article. When it is not desired to read visually, the book may be read audibly by a parallel phonographic record. Each disc gives fifteen minutes of moving pictures. *Elect. World*, Aug. 22; 1896. U. S. pat. app. 423,186; Nov. 10; 1920.

I am much indebted to Messrs. Bausch and Lomb for their kindness in making up the optical parts for the recording and reproducing trains.

4. ELIMINATION OF ANTI-CIVILIZATION EFFECTS OF OVER-ORGANIZATION

D. Elimination of anti-civilization effects of present boards and councils. The fundamental causes of the ill effects are the failure to see that research work and development work are of an essentially different nature; and the usurpation of, and interference with, development work by bodies adapted for research work. This is analogous to the fact that most of our state and business troubles are due to usurpation of and interference with administrative work by that part of the organization which should be executive only.

The distinction has been made clear; perhaps best through demonstration of the law connecting organizations and development, given above, i.e. that "No organization engaged in any specific field of work ever invents any important development in that field; or adopts any important development in that field until forced to do so by outside competition."

The remedy is to keep these two functions, i.e. research, or the obtaining of information; and development, or invention, separate. The first is a function of the administrative branch of the organization; the second is a function of the executive branch.

The method of doing this is given in detail in the chapter on RESEARCH AND DEVELOPMENT. In outline it is this:

The organization of any government has three parts, the Administrative, the Executive, and the Judicial. The first decides what is needed, the second does it, and the third sees that what is being done does not conflict with what has been done before.

The departments connected with Research, i.e. the obtaining of facts, should be a part of the Administration, i.e. of Congress, for it is Congress which should decide what is to be done. The Department of Research should include not only the obtaining of physical facts, but statistics, and history of states and business organizations, and information in regard to employment and interstate commerce. It should be closely in touch with Congress.

The department connected with development, i.e. invention, should be a part of the Executive, i.e. of the President and Cabinet element. The boards of the army and navy should be triplicate, Junior, Intermediate and Senior, and all inventions should pass

through all boards, the Junior and Intermediate being for the training of the personnel and the Senior deciding finally. The decisions of each officer in each board should be recorded, in the same way as their service records, and only those who have, while on the Junior and Intermediate boards, demonstrated that their judgment is good, should be promoted to the higher boards. If their judgment is not good, they should be given other details.

All inventions should be open to opposition for one year from grant, and after that presumed valid.

All inventions should be open to use by all manufacturers on payment of a royalty. One-half of this royalty should be unalienable from the inventor, all return to other interested parties being derived from the other half.

5. PERSONAL USE TAX; GRADUATED; COLLECTED WITHOUT BOOK-KEEPING OR TAX DEPARTMENT; NO TAXES ON PRODUCTION

For details, blank forms, etc., see chapter on TAXES.

In outline; - every tax payer elects some savings or national bank for his Personal Use account but does not deposit unless he wishes to.

When a man is hired the company takes his signature in the usual way and if he has no bank forwards one of the signatures to the bank indicated by the man. When the man signs his time card or pay roll he indicates on it how much he wishes in cash, being free to change his mind at any time up to pay day, when the company pays him the amount of cash indicated and mails the original time card to the bank where the balance, withdrawable at any time by cheque, is placed to his credit.

In buying cash may be paid or the purchaser may sign his name to the clerk's list of purchases on which the clerk has written the name of his bank, the store depositing the original signed list to its account giving the purchaser one carbon as a receipt and retaining the other for its books. If goods are sent C. O. D. the original is signed when goods are received. If charge account the originals are not deposited until the end of the month or time arranged by purchaser. If goods are returned, the credit slip is deposited. In other words the system is exactly the same as at present except that the purchaser does not have the trouble of writing out the cheque, merely signing his name, and the store-keeper is saved the trouble of sending out accounts, etc.

The bank, knowing always the total of the expenditure, reserves the amount of the graduated tax and at the end of the tax year remits to government, Rulings for distinguishing between personal and non-personal should, not exceed ten lines. Payments in error are rectified by deposits from the corporation concerned.

Every time the writer makes an improvement in accounting experts say it will not work. But it always does, and this will work simply and well.

From the above it will be seen that the main problems, i.e. Stabilization of crop yield and of employment;

Securing a sufficient amount of power;

Sufficient means of communication;

Elimination of the injurious effects of organization; present no insuperable difficulty and may be accomplished when desired.

The archeological work which is being carried on in Mesopotamia, in Egypt, and in Elam is of the utmost importance, and if the present imbecile squabbles about oil were dropped, some plant engineer (for the work hardly calls for invention, the method is so obvious) detailed for a year to the work of producing a better and cheaper liquid fuel than petrol, and a fraction of one per cent of the amount saved, say ten million dollars per annum, devoted to the archeological work, the results obtained would be invaluable. Even if we find the records of the parent civilization, of the Caucasus isthmus, this will not lessen the value of the records of these later settlements for they form the connecting link with our own civilization.

It is however highly probable that we shall find them, in part at least. The city on the eyot, the capital of the Ur-al, was not destroyed by the Deluge. Beneath its surface were immense subterranean chambers, reputed to be prisons, but really the prototype of the underground labyrinth at Lake Moeris, which had 1,500 chambers and held the sepulchres and the records of the early Egyptian kings. (Herodotus, 2;148.) It is not probable that these were entirely destroyed by the Scythians, or that they were entirely removed to the Alizon valley by the Cabeiri, or that they have disintegrated, in spite of their immense age, over 9,000 years.

The openings to the chambers are of course lost and were probably always a secret. The chambers themselves may be re-discovered in just one way, i.e. by core drills. One oil engine driven dynamo and a score of electric core drills could cross section the eyot in five or six directions in a few months. The depth of drilling would not need to be more than 150 feet, and the cores would tell when archeological material was cut into; and cement could be used to stop influx of water through the drill holes while a larger shaft was being sunk. It is probable that many of the records are on bronze or orichalcum, others may have been preserved by bitumen from the oil wells.

Excavations should also be made in Colchis, at Sarapana and on the site of the great temple described by Strabo, to recover the earlier Egyptian records.

PART 2

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INTRODUCTION

In 1923 the late Professor Reginald A. Fessenden published the first six chapters of "The Deluged Civilization of the Caucasus Isthmus" and in 1927 published one additional chapter.

The present posthumous volume contains four additional chapters and seven articles on related subjects. Since its interest will be primarily for scholars, only one hundred copies have been printed for private distribution.

In reading it, two points should be kept in mind. First, that Professor Fessenden never considered these articles as constituting a final, definitive and documented work; but intended rather to draw the attention of other scholars to certain remarkable facts and to stimulate them to further research. Second, that Professor Fessenden's theories, while revolutionary, are nevertheless worthy of serious consideration for several reasons. Educated men unanimously hold that, no matter what field of knowledge is explored, there is just one universal scientific technique for finding the truth in any field. And Professor Fessenden was a master of that technique. His reputation as one of the outstanding physicists of his day was due entirely to his meticulous application of scientific methods to every problem he attacked. With him, nothing was left to chance. His study of apparently anomalous phenomena, classed by others as "freaks", led to his discovery of hitherto unsuspected laws, which were later fully verified by other scientists. Obviously a mind of this type will apply the same scientific methods to any problem, whether it be of mythology, archaeology or physics. And Fessenden did just that. In preparation for a more comprehensive and fully documented work, he had assembled over 1000 pages of typewritten notes, containing over 13,000 references drawn from at least 400 unquestioned authorities. Therefore his announcement of any hypothesis indicates that he had checked and evaluated this mass of data, and that the facts supported his hypothesis.

It may perhaps be objected that Professor Fessenden was not a professional archaeologist. This is true. But Heinrich Schliemann, an army contractor, enriched our civilization by the treasures of Mycenae, despite the jeers of professional archaeologists. Friederich Grotefend, an amateur, discovered the correct method of translating cuniform inscriptions twenty-seven years before the Academy of Gottingen could bring itself to admit that he was right. Peter Dobson, a cotton manufacturer, published the correct theory of glacial movements in 1825 and then waited seventeen years for the professionals to catch up with him.

Fortunately the trade-guild type of mentality is rapidly disappearing among our scientists. And it is for that reason that Professor Fessenden's theories have met with approval from such eminent authorities as Sir Flinders Petrie, the late Professor A. T. Clay, Mr. W. E. D. Allen, Professor Meschaninov and many others.

Finally it should be considered that Professor Fessenden's theories furnish the one existing logical explanation of a vast number of discoveries in mythology, history, ethnology, archaeology and geology which are otherwise totally inconsistent. It is to be hoped, therefore, that this volume will be read in the same spirit in which it was written: with the humility of the true scholar, to whom all truth is welcome.

Unfortunately Professor Fessenden's long illness prevented his undertaking the definitive and fully documented work for which he had assembled the data. However, all of his typewritten notes and maps have been preserved for the use of other scholars. And,

should any reader of this volume feel sufficiently interested and qualified to carry on Professor Fessenden's unfinished work, it will be a pleasure to place all the available data at his service.

R. K. Fessenden

*Old Saybrook
Connecticut
U. S. A*

CHAPTER 7

THE RECORDS OF THE PRE-DELUGE CIVILIZATION OF THE CAUCASUS ISTHMUS

IN the "Deluged Civilization of the Caucasus Isthmus" the writer recently submitted evidence that the Caucasus Isthmus may have been the seat of a great civilization antedating those of Babylon and of Egypt by many thousands of years; that this civilization had recorded its history; and that the records were to be found on the eyot between the Terek and Sunsha rivers and in the upper Alizon valley.

FIELD EXPEDITIONS

The results of the investigation have been so favorably received by archaeologists and ethnologists that the writer is encouraged to indicate more definitely exactly where these records may be found; in the hope that one or more field expeditions may be formed to undertake their exhumation during the coming summer.

DATA

In addition to the data given in "The Deluged Civilization", we have the following traditions:

Mantho. "It remains therefore to make certain extracts concerning the dynasties of the Egyptians from the writings of Manetho the Sebennyte, the high priest of the idolatrous temples of Egypt in the time of Ptolemy Philadelphus. These, according to his own account, he copied from the inscriptions which were engraved in the sacred dialect and hieroglyphic characters upon the columns set up in the Seriadic Land by Thoth, the first Hermes; and after the Flood were translated from the sacred dialect into the Greek tongue in hieroglyphic characters, and committed in writing in books and deposited by Agathodaemon the son of the second Hermes, the father of Taut, in the hidden chambers of the temples of Egypt" (from Syncellus, Chron. 40) .

Sanchuniathon. "And Usous . . . was the first man who dared to venture on the sea. And he consecrated two stelae or pillars to Fire and Wind" (Ur and Al, hence pillars of Khur-Khal, or Hercules) . . . "These things the Cabiri, the seven sons of Sydyk and their eighth brother Esmun first of all set down in memoirs as the god Taausus commanded them." (From Eusebius, Praeparatio Evangelica, Book 1, Chapter 6.) I do not know if it has been pointed out that Taausus of Egyptian and Phoenician mythology is the same as Taaus of the Babylonian mythology. The name means "The One Who Does Things for the Spirits". He is also the Theos of the Thracians. He was the private secretary and executive of the Gods.

Ammianus Marcellinus. "There are certain underground galleries and passages full of windings which it is said that the adepts in the ancient rites (knowing that the Flood was coming and fearing that the memory of the sacred ceremonies would be obliterated)

constructed in various places and distributed beneath the temples; which were mined with great labor. And, smoothing the walls, they engraved on them numerous kinds of birds and animals and countless varieties of creatures of another world, which they called hieroglyphics."

Josephus. "The sons of Seth, being naturally of a good disposition, lived happily in the land without apostatizing and free from any evils whatsoever and they studiously turned their attention to the knowledge of the heavenly bodies and their configurations. And lest their science should at any time be lost among men, inasmuch as Adam had acquainted them that a universal aphanism or destruction of all things would take place alternately by the force of fire and the overwhelming powers of water, they erected two columns, the one of brick and the other of stone, and engraved upon each of them their discoveries; so that in case the brick pillar should be destroyed by the waters the stone one might survive to teach men the things engraved upon it, and at the same time inform them that a brick one had formerly been also erected by them. It remains even to the present day in the land of the Siriad." (Antiquities, Book 1, Chapter 2.)

POINTS IN REGARD TO WHICH TRADITIONS ARE AGREED

The traditions handed down by the Egyptian priest Manetho, the Phoenician historian Sanchuniathon, and the Jewish historian Josephus are in better agreement than most tradition groups and are consistent that:

1. The records made before the Flood were on pillars.
2. They were written in hieroglyphics.
3. The pillars were in the Seriadic country.
4. They were made by the sons of Sydyk or Seth (the Cabiri).
5. That either after or before the Deluge copies were made in hieroglyphics on the walls of, or in books deposited in, extensive systems of underground chambers.

These traditions will be found translated in Cory's "Ancient Fragments" or in Mead's "Thrice Greatest Hermes".

WARNING OF DELUGE IN TIME TO MAKE RECORDS

As pointed out in "The Deluged Civilization", there was ample warning of the Deluge. For example, Noah of the Pentateuch and Atra-Hasis of the Babylonian tradition had time to build the immense Ark and the Telchines had time to colonize Cos. So there would have been time to erect the monuments. From the history of Berossus, quoted by Syncellus and Eusebius, it is clear that seals began to appear in increasing numbers as the Deluge drew near; which may be significant as indicating a breaking through of the Arctic Ocean into the Asiatic Mediterranean on the east of the Caucasus. The connection between the Arctic and the Asiatic Mediterranean is shown on Strabo's map but had probably ceased to exist by his time. The Caspian, Aral and Balkasch Seas are all that are now left of the Asiatic Mediterranean.

There is one interesting point about the Noah or Atra-Hasis traditions. In one tradition he left the Ark with his wife and the pilot and disappeared. The others thought he had been taken to heaven and make no further reference to him in their tradition. But in another tradition Gilgamesh goes to see him at his old home, to learn the story of the Deluge. It rather appears as if he and his wife and the pilot had gone back home immediately they got on dry ground. In the Pentateuch one of the versions states that Noah walked with God, an expression used also of Enoch; so there is some indication that some of the survivors of the Deluge did not know what had become of the others, because they separated as soon as dry land appeared.

LOCATION OF THE SERIADIC LAND

The monuments were not in Egypt for two reasons; Seirios until a comparatively late date always meant the sun itself and not the star; if Josephus had meant Egypt he would have said so. I have also a Phoenician reference which shows that Siriadic land cannot mean Egypt.

The word Siriadic might mean one of three things, in view of the form "-iadic":

1. The country of the sun (Seirios).
2. The country of the lasso users (seira).
3. The country of the Seres.

These are all the same land, that is the North Caucasus Isthmus, Asiatic Sarmatia. For it was the land of Ur or Apollo where, according to a fragment of the Phaethon of Euripides, he stabled his horses. The Seira was, according to Liddell and Scott, Greek Dictionary, "a line with a noose used by the ancient Sagartians and Samartians to entangle their enemies. Herod. 7.85 and Paus. 1.21.8". And the Seres lived there, according to Strabo 11.5.8 and Muller's Ptolemy, page 905. The latter states that their kingdom was near the mouth of the Hypanis (now Kuban), but from other writers it extended across the whole isthmus and this agrees with the fact that they were the first to establish caravan routes from there to Babylon. See Strabo, *ibid*.

MEANING OF SYDYK

That the steles were built by the sons of Sydyk is significant because sydyk means "pointing up to the sky" and was the name given to an ithyphallic monument. The root is found in this meaning in the Greek word "sideunes".

LOCATION OF THE SYDYKS

Stieler's Hand Atlas of 1905, Plate 49, P. 19, shows right in the center of the eyot where the long mounds define the position of the city of Ur or Apollo, a village called Pssydache (Sydach). I believe this to be the position of one of the steles.

PSSYDACHE THE BRICK OR THE STONE STELE

This was probably the brick stele. The city of Ur, that is Urach, was the Erech of the Gilgamesh epic of the Babylonian inscriptions. The name survives in Terek. "Sevenfold Erech of the wide plazas" was sevenfold Tartarus of the wide ring-shaped plazas with their race tracks, etc., between the encircling canals. Erech, we are told, had brick walls, which would be natural on account of the convenient clay and bitumen. So it is rather more than probable that the stele of Pssidache was built of brick; and for other reasons (Erythria, etc.) it was probably red brick.

The stone stele would be built where stone was convenient and to the south, for the north was the plain which was to be inundated and there was no convenient stone or good foundation. Going south, about thirty miles we come to the pass of Arabus or Erebus, and the stone stele might have been placed there.

But at the further end of the pass where it debouches into the Alizon valley, which we know was the other home of the Cabiri, is a town called Achmuti or Eshmuti. As Eshmun or Achmun was the eighth Cabiri we might reasonably look for the stele in this neighborhood.

About ten miles down the Alizon valley is another place called Semochada Scheni, which means "Sun City of the Scheni." (The Phoeni or Phoenicians, the Fenku of the Egyptian Book of the Dead.)

ITINERARY OF THE BOOK OF THE DEAD

The Egyptian Book of the Dead gives the itinerary of the dead exactly as Homer gives it (see Chapter 125 et seq.). But the transportation is in the hands of the Phoeni. A ritual (burying a lamp with a glass chimney and digging it up again) is gone through at the "city north of the olive tree", that is, Phanagoria (for olive yards of Phanagoria see Smith, Classical Dictionary) at the mouth of the Kuban. The shade sees Tartarus at a distance, goes through the pass of Erebus, and comes out into the Alizon valley at Tioneti (To-neter, the "Holy Land"). About ten miles down the shade comes to Eshmuti (Eshmun city); a little further down, to the "City of the Sun of the Phoeni" (or possibly of the Overseers, Shemochada-Scheni). Still further down the valley is "Sekhet-Eli", the fields of the sun or Osirus (Sakatety). And finally to the mountain of Bakhu, the "Mountain of Sunrise", projecting easterly into the Caspian Sea (now Baku), and the Sek-het-sasi or "flaming fields" common to the Egyptian, Greek and Parsee mythologies.

THE RIDDLE OF THE BOOK OF THE DEAD

To-neter (the "land of the Aet-Ur) was south of the Caucasus, on the other side of Erebus from the Siriadic Land, i.e. Asiatic Sarmatia. When one remembers the great olive yards of Phanagoria and the mineral oil of the Baku district, the riddle of the 125th Chapter of the Book of the Dead ("What is thy name?" "I am he who is assembled under the flowers and who dwelleth in the olive-tree") is easily answered. It is oil, mineral and vegetable, i.e. Fire, Hermes.

The Book of the Dead, chapters 147 and 149 is a most valuable guide book to the Caucasus region, as it gives the names of the tribes, places, etc. in considerable detail. In Chapter 147 the doorkeepers of the seven Arits or earths or countries are mentioned by title and are not the names of individuals, of which a place name sometimes forms a part. But the Watchers are in all cases the different tribes or nations, beginning with the Cimmerians, the Seres, etc. And the Heralds are the marks or boundaries which indicate to the shade when he is passing from one nation's territory into that of another. The route above the head of Oceanus seems to have been more southerly than that of Homer, for we find "Teb-hra-ha-Keft" (Tiber or Keft) given as one of the Heralds.

It will be noted that the entrance was between pylons (the Bo-az pillars). In Chapter 149 the fourteen aats are different regions beyond Erebus. The first is Asmuti, then Hercules (now Melikarth), etc.

Most of the identifications are direct, the names being unchanged. For example, "the two sycamore trees of turquoise, from between which the God Ra doth emerge when he setteth out upon his journey over the Pillars of Shu towards the door of the lord of the East, wherefrom Ra cometh forth" is unmistakably the gap at Shu-mash of Mar-ash.

But one would not immediately identify Sekhet-Aaru, literally "The Field of Reeds", the name of the land of paradise or heaven, with Sakat-ali unless one knew that El was the other name of Shem, the sun-god; and that Ta Shema meant "reed land" in Egyptian; and so Sekhet-Aaru was merely the name used to the uninitiated for the hidden or secret name, Sekhet-Shem or Sekhet-Eli.

Another instance of this is the use of the name "Heru-khuti", i.e. Hercules, for the Phoenician title (Melikarth) of Hercules.

EXACT LOCATION DETERMINED BY OVERLAPPING OF TRADITIONS

We have seen how the Greek, Phoenician and Egyptian traditions overlap, starting from the entrance to the sea of Azov and extending through the pass of Dariel, as far east as Baku and the "Flaming Fields" at the extremity of the peninsula of Apsuron.

Analogously the Babylonian traditions start at the eastern extremity of the peninsula of Apsuron at Shamasha and Marash and extend west, past Sabuje and Napare-uli or Sapare-uli, through the pass of Dariel to Terek (Tartarus) on the north, Tamischiera on the west, and Bit-Jakin on the east. Overlapping, therefore, the other three traditions, Greek, Phoenician and Egyptian.

This overlapping enables us to determine quite exactly the location of the chambers where the records were stored after transcription and translation from the steles.

For Berossus' record of the Deluge, which he took from the cuniform records in the temples at Babylon, states that Cronus bade Atra-Hasis "setting down in writing the beginning, middle and end of all things, to bury them in Sippara, the City of the Sun; to

build a boat and go aboard it with his family" and that "after the Flood some of those saved went to Babylonia, dug up the writings from Sippara, founded many cities, built temples, and so repopulated Babylonia".

The original Babylonia (Bab-al-on, "Gate to the Land of the Sun", Havilah, Pshaveli) was, we know from other evidence (see "The Deluged Civilization" pp. 49, 50, 75, 76) substantially the same as the land of Dilmun, i.e. the-Alizon valley where are now the Plain of Adschinour, Chaldan, Lagodeschi, etc.

And Napare-Uli of the Stieler Atlas (Papare-Uli of the Times Atlas) is Sippara-Eli, i.e. "Sippara of the Sun". It was there that the records were stored. And we may be sure that, even if the records were removed for consultation, they were replaced because there would be no better way of keeping them.

THE RECORD STELES NOT THE PILLARS OF HERCULES

The brick and stone steles were not, we may be fairly sure, the Pillars of Hercules. The Pillars of Hercules were erected to Ur the Fire God and to Al the Storm God. These two gods were amalgamated into one twin god, possibly from some incident as that described in the life of Elijah (1 Kings, 18), the god of fire. Fires were kept burning on top of the twin pillars. Later these fires were shielded by glass, so that one gave a green, the other a yellow, light. Herodotus describes those at Tyre as "Two pillars, one of pure gold, the other of emerald, shining with great brilliancy at night." The pillars were called Jakin and Boaz. See 1 Kings, 7:15.

LOCATION OF THE PILLARS OF HERCULES

The fact that Nebuchadnezzar, after reaching them in his northern expedition, next went to the north shore of the Black Sea and to Thrace; and that Hercules, coming back from the pillars with the cattle of Geryon, traversed the north shore of the Black Sea (see Megasthenes, quoted by Strabo and Herodotus, 4.8), puzzled the ancient geographers because they thought that the Pillars were at the straits of Gibraltar. And because they had overlooked the fact that the Phoenicians of Sidon had known that the Pillars had been lost and that the Phoenicians had sent out four expeditions to look for them but had reached no conclusion from these expeditions except that the straits of Gibraltar were not the true Pillars of Hercules. See Strabo, 2.5.

Of course the fact that the true Pillars of Hercules were in the north Caucasus isthmus explains why both Nebuchadnezzar and Hercules, after leaving the Pillars, came next to the shores of the Black Sea.

THE PILLARS OF HERCULES ON THE MAP UNDER THEIR RIGHT NAMES

Perhaps the most astonishing thing is that the eastern Pillars of Hercules are to be found on the map, under their right name, i.e. Stavka Terekli (Stave of Hercules) on the Times

Atlas 71,L,2; or Kurtkeuli-Juk-Jewe (Jak beacon of Hercules) on the Stieler Atlas, 49, 0, 19.

This village is, as shown by the old shell deposits, on the former shore of the Caspian or Asiatic Mediterranean; and at the old mouth of the Kuma. It marked the spot where ships from the Asiatic Mediterranean must enter the Manytsch Lake system in order to go through to the Black Sea.

It is now, owing to the recedence of the Caspian, about fifty miles inland; and this, together with the fact that no one looked for the Pillars in this locality until the writer was forced to the conclusion that they must be in the vicinity, must be the reason why they were not discovered by others long ago.

LOCATION GIVEN BY PTOLEMY

Ptolemy in his Geography gives the location of certain pillars which he calls "Pillars of Alexander". As Alexander never got that far north, that excited my suspicions. Ptolemy gives the position of his pillars as (after correction) 46.00 East, 45.00 North. Looking at the Times and Stieler Atlases in 45.40 East and 44.40 North, I found this village "Stake of Hercules" or "Jak beacon of Hercules."

The extent of the movement of the shore line between the time of the AL-Ur civilization and Alexander's time is shown by the fact that Khurtkeuli Juk Jewe, on the old shell beach at the old mouth of the Kuma or Alontas is now sixty miles inland from the pillars of Alexander, i.e. Schandr Juk Owsk and Schandr Juk Owak (Alexander's Jak beacon) though still on the shore, is thirty miles away from any mouth of the Ta-lonta. The site of Alexander's pillars is not very far, it will be noted, from the position given by Ptolemy.

ISLAND OF BIT-JAKIN

About sixty miles north east is an island called Birjus-Jaksh or "Fire Mound of Jak". This must have been about fifty miles from shore at the time we are considering and may have been the island Bit-Jakin referred to in one of the cuniform inscriptions. I have forgotten just how far the cuniform inscription puts Bit-Jakin from shore, and Bit-Jakin may have been Ust-Urt. In any case it cannot have been the pillars.

EPISCOPATE

There was, about 200 A.D., an episcopate of Herculea Pidachthoe. The location has been lost, but I take it to be Herculea Sydach-thoe, i.e. Hercules Shore Stele. It is known to have been in this neighborhood.

WESTERN SET OF PILLARS

The western set of pillars, Bo-az, i.e. water-gate or harbor of Az, were at the entrance to the Sea of Az-ov.

There is nothing to fix their exact position except possibly a statement of Strabo who gives the position of a very high mound which he says was a monument to some king.

WHY THE SITE OF TARTARUS WAS OVERLOOKED

When Nebuchadnezzar came back from his northern expedition (with which, incidentally, Pythagoras may have been a soldier; see Eusebius, Arm. Chron. 53) he built the walls of Babylon which were 335 feet high and 85 feet thick. This is stupendous but there is good reason for believing that the walls of Tartarus or Erech were still more monstrous. The civilization of Erech may be called a Dinosaur civilization.

It is probable that the walls of Erech have been mistaken for natural hills, because of this great size.

CONCLUSION

We may therefore feel fairly sure that:

1. The Pillars of Hercules were not the steles on which the records were made.
2. The brick stele was at Psidache.
3. The stone stele was at Napare-uli.
4. The immense underground storage rooms of the records were, the one at Psidache, the other at Napare-uli.

ARCHAEOLOGICAL EXPEDITIONS

As these are the only monuments and records, of whose existence we know, which antedate the Deluge, it is much to be desired that these sites should be investigated by competent archaeologists, equipped with core drills. Such drills may be easily obtained from the near-by oil fields of the Baku district.

December 30, 1923.

CHAPTER 8

THE HOME OF ABRAHAM

IN 1882 the writer, in the course of some work for honours in Classics, became convinced that the geography of the so called "myth lands" of the ancients was deserving of more attention than had been given it and undertook the problem of solving the apparent discrepancies. It involved the collection, tabulation, comparison, and in many cases the critical examination in the original languages, of several hundred thousand myth references and nearly resulted in loss of sight, but in 1923, after a year's delay through failure to find a publisher, the results were printed at the writer's own expense, under the title "The Deluged Civilization of the Caucasus Isthmus."

The solution therein given has met with the approval of the most eminent authorities in the various fields of archaeology, see for example Flinders Petrie, "Ancient Egypt", Dec. 1924; Clay, "Origin of Biblical Traditions", p. 159; and many private letters; and supplementary chapters, amplifying certain conclusions, have been published, in full or in abstract, as opportunity was afforded; e.g. on the route of the Egyptian "Book of the Dead" and on the Greek, Babylonian, Semitic and Chinese so called "myth lands" in the Christian Science Monitor for March 18th, 1924, and March 8th, 1926; on the location of the pillars of the Cabiri and their subterranean record chambers in "Nature", March 1st, 1924; and an article shewing that the names of the ten predeluge kings given by Plato in his "Critias", when translated in the method indicated there, are classical Egyptian and correspond, six at least of them, to the ten predeluge names of the lists of Berossus and of the Old Testament, has been forwarded for publication in one of the English periodicals.

AID OF JEWISH SCHOLARS SOUGHT

The present article is a fuller treatment of the problem of the birth place of Abraham, and is a submission of the data on which the conclusions were reached for the purpose of obtaining searching criticism from those most competent to give it. In his search the writer has covered many literatures, and has some knowledge, in part minute, of a number of Semitic languages, including Hebrew and its various forms and allied tongues, as will perhaps be evident later, but as Jewish scholars will know, there is a great mass of Jewish literature supplementary and explanatory to the Pentateuch and other books of the Old Testament which very few men have been able to know completely, and very few even in part. Of these the writer knows but a very small part, but enough to know that they probably contain matter which would throw light on the problem now under discussion. It is to scholars of this great Jewish literature that this article is addressed, in the desire that they may criticise and it is hoped confirm and extend, the conclusions given below.

THE CAUCASIAN TRUE HOME OF ABRAHAM

As will be seen more fully later, the importance of this investigation is not to Jews alone but to all humanity; and the conclusions reached and the evidence on which they are

based will it is believed be accepted by competent archeological authority. Their absolute establishment must be through and after most severe criticism and support from other sources of evidence, to be derived, I feel, most surely from those very learned in the Hebrew Scriptures. who else, for one example, can tell us if there is not some where in the commentaries an explanation why the Babylonian Talmud appears to associate the name Erech with Ur-Kasdim. For this reason I address myself to and ask the critical assistance of such scholars, and give references for all statements made.

The article is divided into these sections:

1. Why the Babylonian Ur (modern Mugheir), is at present supposed to be Ur-Kasdim.
2. Why it is certain that it is not.
3. Quotation of all references in the Hebrew and other scriptures which appear to bear on the location of the home of Abraham. Peculiarities of Old Hebrew records.
4. Demonstration that the references are all consistent with each other, and can indicate one place only, a district in the Caucasus isthmus.
5. Discussion and corroboratory evidence.
6. Conclusions.
7. The new prayer and the new life of Israel.

WHY UR (MUGHEIR) IS AT PRESENT SUPPOSED TO BE UR-KASDIM

It will be best to quote direct from Dr. Albert T. Clay, Professor of Semitic Philology and Archeology at the University of Pennsylvania and later of Yale, one of the very great authorities on Semitic and Babylonian matters, and who had been in charge of the excavation work of the Bagdad School in Mesopotamia. The extracts are from works of his, published under the memorial fund of Alexander Kohut, another great oriental scholar and the author of *Aruch Completum*, the Talmudic Encyclopedia. As follows:

"The almost general acceptance of this identification is due to the fact that no attractive reasons have been given for any other site." Amurru, p. 167.

"The identity of Mugheir in Southern Babylonia with Ur of the Chaldees, although possible, is by no means certain, and especially as the Jews who lived in Babylonia did not know the site." *Origin of Biblical Traditions*, p. 43.

The identification has been opposed by many scholars; Dillman, *Genesis*, Ed. 6, p. 213; Kittel, *Geschichte der Hebraer*, sect. 17; Albright, *Jour. Bib. Lit.* XXXVII, 134.; etc.
NOTE. For reasons of space, references are restricted to those most authoritative or most illustrative.

WHY IT IS CERTAIN THAT MUGHEIR IS NOT UR-KASDIM

1. Mugheir was never called Ur. The mistaken idea that it had once been called Ur arose from a mis-translation. To quote Clay, Amurru, p. 167: "Sir Henry Rawlinson in 1885 found bricks at Muqayyar (Mugheir) in Southern Babylonia from which he gathered that

the ancient name of the city was Hur. Subsequently it was found that the reading of the name was Urummu, and in late Babylonian, Uru, i.e. with a final vowel (long u)".

See also "Lamentation on the Destruction of Ur", Univ. of Pennsylvania "Sumerian Liturgies and Psalms" lines 10-11 and 16-17.

2. Ur was a country, not a city. See "Sacred Geography", Wells, Vol. 5, p. 216. For proof of this, see *infra*.

3. There' were no Chaldeans in Urummu until many centuries after Abraham's time. See Clay, "Antiquity of Amorite Civilization", p. 3 for date Abraham lived, i.e. circa 2100 B.C.; and Budge, "Babylonian Life and History", p. 44; Sayce, "Races of the Old Testament", p. 98; Olmstead, "History of Assyria", p. 123; for the date at which the Chaldeans first appear in Babylonian history, i.e. circa 950 B.C.

4. The position of Mugheir is such that if it were Ur it would be impossible to reconcile it with the statements made in regard to Abraham's actions;

a. Abraham left Ur Kasdim to go to Canaan "and came unto Haran". Genesis 11:31. If Ur Kasdim were Mugheir this would be like going from New York to Cleveland, to get to Montreal. Canaan is nearer to Mugheir than Haran is, and the territory between Mugheir and Canaan is easy travelling. Even today, with conditions much worse than in Abraham's time, more than 20,000 Arabs with their wives and children and 30,000 sheep and 50,000 camels trek annually from Central Arabia to the Kurdish hills and back. E. A. Powell, "By Camel and Car", p. 118. From Mugheir to Canaan would be about an 8 day trip with camels loaded each with 500 lbs. *ibid*, p. 121.

b. Abraham "fled." Judith, 5:6. But Haran was on the main commercial route between Babylonia and the Mediterranean, and only about 8 days travel away. Powell, "By Camel and Car", p. 121. The priests of Mugheir would have known where Abraham was within the month, and the two places were closely allied.

c. Abraham fled because he "would not follow the gods of his fathers". Judith, 5;6. But Mugheir and Haran both worshipped the same god, the moon god. Clay, "Amurru", p. 169. And if it be objected that the moon was worshipped as feminine in Mugheir and as masculine in Haran, this was a trivial matter to the Mesopotamians, who in those times made hardly any or no distinction of sex in their gods; the sex was frequently changed. "When the Goddess Ashirta was carried into Arabia, she became the God Athar; and the God Shamash became a Goddess." Clay, *Empire of Amorites*, p. 164; and Barton and others, "Semitic Origins", pp. 120, 191.

The Talmud tells us that Terah, Abraham's father, worshipped 12 gods. The excavations at Mugheir do not shew that any such number of gods was worshipped there. See reports of Bagdad School. But twelve gods was the number worshipped by the fire worshipping Chaldees. See Diodorus Siculus, Book 2, chap. 21.

5. The Jews who lived in Babylonia never believed that Mugheir was Abraham's home. Such a learned archaeologist as Ezra the scribe would have been sure to have known of it if it were so. Evidently it was not in Babylonia at all or he would have known of it.

6. Mugheir is not in Metzara, but more than 1,000 miles south of it.

7. The Babylonians made a practice of naming cities in Babylonia after prominent cities of other lands. For example, in Babylonia we have such city names as Ashkelon, Gaza, Heshbon, in the vicinity of Nippur in the 5th century B.C. See "Business Documents of the Murashu Sons of Nippur." Nippur was a few miles from Babylon. There were at least three Urs. Clay, "Amurru", p. 174; "Biblical Trad.", p. 43.

And there are many other reasons, but the above will be sufficient.

REFERENCES TO LOCATION OF HOME OF ABRAHAM

The principal references are:

1. "And Haran died in the presence of his father Terah, In the land of his nativity, Ur-Kasdim." Genesis, 11:28.

2. And Terah took Abram his son, And Lot the son of Haran, and they went forth with them from Ur-Kasdim, to go unto the land of Canaan; and they came unto Haran, and dwelt there.. And the Lord said unto Abram, Get thee out of thy country and 4 from thy kindred and from thy father's house, unto the land that --y I will shew thee." Genesis, 11;31 and 12;1.

3. "This people are descended of the Chaldeans, and they sojourned heretofore in Mesopotamia, because they were not minded to follow the gods of their fathers, which were in the land of` Chaldea, and worshipped the God of heaven, so they cast them ;` out from the face of their gods and they fled into Mesopotamia, and sojourned there many days." Judith, 5;6-9.

4. Abram was the eighth in descent from Ar-f-Chesed, the son of Shem. Genesis, 11;10 seq.

5. "Abram the Aberite" Genesis 14;13. Not Abram the Hebrew, as generally translated, for the first letter is He and not Ayin. No. where is descent from Heber emphasized. The Septuagint, a trans. lation into colloquial Greek, made about 250 B.C. and adopted as official by the Alexandrian synagogue, recognises that the term cannot mean "The Hebrew" and translates it as "perates", the "passer-over". The word Aber is sometimes spelled "Ober" or "Eber" or "Uber". See fuller discussion below.

6. Abram came from "Aber a naher". Joshua, 14;2. i.e. "Aber the river". This is generally translated "the other side of the flood", which cannot be correct; see discussion below.

7. Haran was in Padan Aram-in Mesopotamia. It was Abraham's country. Genesis 24;4. 24;10. 25;20. 27;43. 28;2, 5, 10.29; 1, 4. It was the land of the people of the East. Genesis 29;1. Laban and Bethuel were Syrians. Genesis, 25;20. The language of Mitanni, in which district Haran was, is called that of Suri in the Assyrian lexical texts. Zeitschr. fur Assy. Aug. 1890. v. 2, 3. (note Su-ri; Su-tu; Seuthes; etc.). Syrian is "Arimi" in Hebrew.

8. Abraham was "an Arimi ready to perish" Deuteronomy, 26;5.

9. Abraham was "of the Chaldean race", Eusebius.

10. The Chaldean wise men spoke to Nebuchadnezzar in "Aramith". Daniel, 2 ;4. Note Ezra, 5 ;12.

11. Torah worshipped twelve gods. The Talmud.

12. The Chaldeans "reckon twelve superior gods", Diodorus Siculus, Bk. 2, chap. 21.

13. The hieroglyphs on the Egyptian obelisks were Chaldean signs for words. Cassiodorus, Bk. 3, chap. 2, 21.

14. The cuniform letters corresponding to Ur in "Ur-Kasdim" also mean Burbur, Amurru, Uru, Uri, Ari, Accad. Clay, "Bib. Trad.", p. 22; and "Amurru", pp. 102, 104, 140.

15. The old name of (the country of) Babylon was Iraqa. Olmstead, "Assyria", p. 60. In the Septuagint, Accad is "Archad".

17. Chaldeans were descended from Ar-f-Chesed. Josephus, Antiquities, 1;4.

May 1,1926.

EDITORS NOTE: The preceding article is incomplete, sections 4, 5, 6 and 7, never having been finished.

CHAPTER 9

HOW IT WAS DISCOVERED THAT THE SO-CALLED MYTH LANDS WERE THE CAUCASUS ISTHMUS

[\[see note 2, below\]](#)

(Published in the Christian Science Monitor, March 8, 1926.)

[This forward was published in the CSM article but was not included in the 1933 volume:

This is the third (and must for some time be the last) of the supplementary chapters of "The Deluged Civilization of the Caucasus Isthmus." The first, giving the location of the pillars of the Cabeiri and of their subterranean record chambers, appeared, in abstract, in Nature, March 1, 1924. The second, disclosing the secret of the "Book of the Dead," that the mysterious routes to and in the Land of Sekhet Auru were actual routes to and in the Caucasus Isthmus by which the embalmed bodies of the Egyptians were to be carried to and deposited in a certain sacred valley in that isthmus, was published in full in The Christian Science Monitor, March 18, 1924; and in abstract with valuable additions by Sir Flinders Petrie, in Ancient Egypt, December, 1924. - D. J. Holeman, January, 2002]

THE discovery that the supposed "myth lands" of the Greeks, Egyptians, Phoenicians, Semites, Babylonians, Assyrians, and Chinese were all of them an actual and an identically same locality, the Caucasus Isthmus, resulted from:

- a. Observation of the curious gap in myth geography between the shores of Sicily and of the Atlantic Ocean;
- b. Deduction from the fact that the old myth makers did not know the existence of the present Atlantic Ocean, and from the fact that the Phoenicians had sent out four expeditions to discover the Pillars of Hercules and had reported, as the result of their investigations, that the Straits of Gibraltar were not the true Pillars of Hercules;
- c. Discovery of the fact that the old Mid-Asiatic Mediterranean of geologists, which had extended from the Caucasus to Mongolia, but which had dried up with the exception of certain portions (the Caspian, Aral and Balkash Seas, though as late as 250 B.C., goods might still be shipped by boat from Constantinople direct to Faizabad, less than 100 miles from Chitral, the valley of the Kyber Pass), had been originally known as the Atlantic Ocean, or to use the spelling given in Stieler's Atlas, 1905, for the far eastern remnant near Lake Balkash, as the "Dschananaschtsch See." And that it had had water communication with the Black Sea by two passages, i.e., the Manytch Lakes route, now being reopened by the Soviet Government and a southern route, now blocked.

And that the Pillars of Hercules, the Kemmenu, were at the entrance where these two water routes branched off. These, are the Bo-Az pillars; the Jakin or Aberiar pillars were located later.

d. The fact that Russia, before its invasion of the Caucasus, had had the entire district surveyed secretly by its emissaries and had published a large scale staff map in 1848, giving very fully the old place names. A copy of this was obtained through the kindness of the British War Office. On this map will be found almost all of the old myth names; the Het Seker hills, the Neb-er-tschai tsars. Nephthys Baku Ta-Manu etc., of the Egyptians; Cronus

Japhetus, Elysion, Tartarus, Gadiri, etc., of the Greeks; Kemmenu, Gori, etc., of the Phoenicians; Erech, Aralu, Arakanna, Maru, Karassachal, etc., of the Babylonians and Assyrians; Uri, Metsara, Adshinour, Chaldan, etc., of the Semites; in almost every case the names absolutely unchanged.

e. The collection and tabulation of all references which it was possible to find in the various literatures concerned. These number now somewhat more than 200,000, and have enabled the geography of the district to be fairly well filled in though the exact limits of a few elements will be better defined by additional work.

SUGGESTIONS

As the writer's knowledge of the various languages concerned is incomplete, except perhaps in certain limited aspects, the most desirable thing possible would be for scholars in those languages to send copies of all myth references to some central organization where they could be collected and tabulated, and be available for workers. The Royal Geographical Society of Great Britain suggests itself; if they are willing they should be endowed with funds, at least \$500,000. Their name is mentioned because in my experience they are by far the most efficient and careful and thorough and helpful of all the societies with which I have had dealings; but no doubt there may be others qualified.

In the meantime, any worker may have the benefit of my own collection of data by simply inclosing a postal card addressed to himself, and numbering his questions. For example:

1. Where is the reference giving the Symplegades as blue and at the Feni Kale, and opposite the temple of Iphigenia?

2. Where is reference giving Taurus as the mountain of the Ros tribe?

In answer to which the return postal card would give:

1. Euripides, "Iphigenia in Tauris," lines 242; 262; 420; (and others) ;

2. Bochart p. Josephus Ben Gorion, p. Abercromby, "Trip through Eastern Caucasus," p. 28.

It will of course be understood that inquiries made merely from curiosity cannot be answered, only those from workers in the field.

ROOTS OF PROTO-CAUCASIAN LANGUAGE

To avoid possible bias, the roots were first built up from study of the place names, as was done for example by Clay with the Amuraic personal names? and were then verified and extended by comparison with known languages. It was found of course to be agglutinate, and to some extent onomatopoeic, and of comparatively few sounds, i.e.:

1. The short vowel, sounded like any of the short vowels. So far as it has a meaning it means "thing."
2. The long E sound followed by the short vowel, as ea, means "blackness," emptiness, like the darkness of a cave, or night, or the expanse of sea, or earth or land.
3. The U or Oo sound means "water" or something labile.
4. The labial sound, B, F, P, Ph, means "of," i.e. possessive case, as in Egyptian "F" and Greek Digamma.
5. The dental sound, D, T, Th, later sometimes interchanged with S or Sh, means "place." So Aet is the "place of Ea."
6. The guttural sound, G, K, Ch, means "like." So Gi or Ki means "earth." Ach means "tribe" or "people." Later sometimes interchanged with S.
7. The L sound means "Storm" and later "Power" or "God."
8. The M and N sounds mean "dominion" or "power." M generally used for masculine and N for feminine. An meant the mast or pillar showing the location of the chief or god.
9. The R sound means "fire." A flame is Ur. Sam-ur means "Holy Fire" and the Cimmerians were the people of the Holy Fire, sometimes called "Gimri."
10. The S sound, the Sh sound, the Z sound have similar meanings. S means "going" in some way. Su means "River." Sh means coming up, so Ash is "rising." Z means "going down" or "going away" and so Az is "the West" or "Darkness."

The place names are compounds of these. For example, Pir is "belonging to fire" or hearth or home. Perival is "home of the wind" or mountain pass. Kemmenu is "Holy Pillars" which were erected in pairs, with fires on top, one to Ur, the other to Al or El, and hence they were called the Pillars of Kur-Kal or Hercules. The Cocytus or Acheten Su (or Ope or Oche) was the river "from" Aeten or Eden. The Pyriphlegethon or Perival Achaeten was the "Pass river from Aeten (or Eden).

In the mountainous parts a guttural or dental is often prefixed apparently for use in shouting over long distances. Xenophon speaks of communicating in this way over distances of 12 miles, which seems incredible but I am told it is possible in the mountains. The effect on a near-by listener is described in "The Peaks of Shala." So

while we find Eden and Acheten in the older maps for the mountain districts, we find Kacheten in the Stieler's atlas. As the prefixed guttural or dental is only found in the later place names, it may be the article "the," as the Egyptian Ta, or a shortened form of Ki, "land."

It will be noticed that in some cases the Greek names are not quite the same as the native Proto-Caucasian ones. This is explained by Strabo, 11;11;5. When they found a name they did not know they changed it slightly so as to have the same meaning if possible, or some meaning by which it could be identified. Strabo gives instances, and we may take for example the Perival Achetan R. This was the Terek or Ur oche, i.e. "Fire River" because it is in the center of the Baku oil district. So the Greeks called it the Pyri Phlegethon or Fire flaming river. Similarly they called the Kachaeten the Cocytus. The other kachaeten rivers they did not know, i.e., the Pirikets kachaeten, Kafr Aeten, Fi Achetan, but the At Aeten they changed to Eridan or Eridanus. All these rivers flow from the neighborhood of Mt. Eden or Edena Pass.

The Greek term "hekaton cheira" really is, not "hundred handed," but "acheten cheira," i.e., "of the tribe. of Mt. Eden."

One Greek term must be mentioned because it has given rise to much confusion. The word "Nesos" is still translated as meaning "island" but it does not mean this at all, except perhaps in late Greek. The Peloponnesus is a peninsula. Arabia was called a "nesos" and so was Mesopotamia. It comes from the roots "an" "aea" and "s's" and means a "sprout of the land." It must be remembered that every word was, and had to be, originally a little poem, and many of them are very interesting; for example, "wine" would seem to be "Queen of the Dark Waters." So "nesos" meant something that sprouted from the land like a twig or a fruit does, in the one case a promontory, in the other an island. It really means a district which is bounded by water, rivers or sea, to a considerable extent, but it does not mean an island, except in occasional instances. Ait does not quite fit, so I would propose the following definition for our English dictionaries: "Nesus. A district largely bounded by salt or fresh water." Circe's nesos for example was, as we shall see, a promontory with a very narrow isthmus, like the Peloponnesus.

DISTRICTS AND PLACES ON MAP

Caucasus Range. Good photographs of this will be found in George Kennan's article in the National Geographic Magazine for Oct., 1913. He describes it as "A huge natural barrier, 700 miles in length and 10,000 feet in average height, across which in the course of unnumbered generations man has not been able to find more than two practicable passes-the Gorge of Dariel and the Iron Gate of Derbent." There is really only one pass, for the Iron Gate of Derbent is not in the range, but is a narrow space between the end of the range and the Caspian Sea. Kennan describes the different climates on the north and south of the range.

"On the northern side of the range lie the treeless wandering grounds of the Nogai Tatars-illimitable wastes where for hundreds of miles the eye sees in summer only'. a parched

waste of dry steppe grass and in winter an ocean of snow dotted here and there with the herds and the black tents of the Nomadic Mongols.

"But cross the great range from north to south and the whole face of Nature is changed. From a boundless steppe you come suddenly into a series of shallow fertile valleys, blossoming with flowers, green with vine-tangled forests, sunny and warm as the south of France.

"Sheltered by a rampart of mountains from the cold northern winds, vegetation here assumes an almost tropical luxuriance. Prunes, figs, olives, oranges and pomegranates grow, almost without cultivation, in the open air; the magnificent forests of elm, oak, maple, Colchian poplar and walnut are festooned with blossoming vines, and in autumn the sunny hillsides of Georgia, Kachaetia and Mingrelia are fairly purple with the vineyards of ripening grapes.'

See also description in "The Deluged Civilization of the Caucasus Isthmus" and the Encyclopedia Britannica.

Wheat and other grains grew wild in the southern part, Hypiberea, but since the northern steppes (the anaaruf of the Egyptians) had no grain at first, the inhabitants of the Tartar district lived on cattle and by hunting. They had no fire at first, but later got it from the tribes living in the oil districts of the northern slope, and the smuggling of this oil was a constant cause of friction until Pir Mithras showed how the cattle themselves could be used for fuel (Herodotus, 4;6¹). This is the probable cause of the punishment of Prometheus and of the description of his division of the sacrifice. The only wood was in Amalthea's Horn, where the Greek temples, built out of wood, were (Herodotus 4; 108) .

The best map of the geology of the isthmus is that by Felix Oswald, the Probate Register of Nottingham, England, who has specialized on the subject.

The Caucasus range is much older than the Himalayas and many of its peaks are more than half a mile higher than Mt. Blanc. Mt. Elbrus can be seen for more than 200 miles. The Dariel Pass, at the center of the range, is very narrow, barely space for a traveler beside the Terek River, and the cliffs run up to 5000 feet. It was closed by iron gates, and was the Erebus of the Greeks and the Erib of the Babylonians and Assyrians and Semites. It was the great highway for the traffic in foodstuffs from south to north and of oil from north to south. In one place the canyon splits, enclosing a mountain mesa, on the side of which was the cave in which Pir Mithra was believed to have been imprisoned, and on the top of which was the fort or castle of the monarch of the region; it is sometimes called Tamyra's Castle. Oil is so plentiful at the northern foot of the pass that the first concessionnaires were ruined by the damage to the farms. The great oily swamp of Acheron was here, into which the Kacheten or Cocytus and the Perivlegaten or Pyriphlegethon flowed. The fountain of the Styx or Ast-ach-su is higher up, and flows into, or is the head waters of, the Kacheteri. No silver mine is shown on the map at the spring, but some are shown a few miles to the west of it. Near here too was the nesus of Bacchus, near Tamish and Nacha on the Ardon. See Staff Map.

NAMES OF DIFFERENT PARTS OF RANGE

The most eastern part of the range where it runs into the Caspian Sea was Mt. Baku, or the "Mountain of Sunrise" of the Egyptians. Here also are Serachi and Kalachany or Telachany. The most westerly part of the range was the peninsula of Tamen, the Ta Manu, the Mountain of Sunset of the Egyptians, and it runs into Lake Maeotis, the Pool of Maatis of the -Egyptians, and the Sea of Az-ov, the "Western Water Gate" or Western Harbor of the Phoenicians. The whole range was the "White Wall" of the Egyptians. The middle and eastern part was the mountain of Maru of the Babylonians, formerly known as Mar-to until Langdon gave the correct reading; the Maru or Meru, i.e. "Thigh," of the Greeks and Egyptians, below which Nysa or Nucha was (there are two places of this name, one seeming to be connected with the vine, the other with wheat).

The eastern end, near Backu, was the Apsu of the Babylonians. This has been taken as the sea, but as Clay has shown, it means "the end." This is what is meant by saying that the dwelling of Nudimmud, i.e'. Ea or Seb, i.e. Seb-En-Gi, was opposite to the Apsu. All the old temples had a ring-like lake, from the stone border of which water spouted. The apsu was originally the stone wall but came later to be applied to the whole lake. Here also are Azarakanna, and Perek-Eshkul; and the great mountains of the range were Kingu (Mt. Elbrus), Lachamu, An, An Schar, Gaga (near Arebus and Astarti Barzun), and below, on the south, were Karassachal and Adshinar and Chaldan.

The *principal rivers* were the Oceanus or Auschet or Aeti Ope or Aradanus, now the Kuban. In former times the whole district north of it was a swamp, where the few inhabitants lived on the Urmanu or Arimu, i.e., hillocks. It originally ran through the Marsh of Trithonis, communicating by canals with the Alontas, but the marsh slipped down into the river, deluging the whole region and closing that passage but leaving the Manytch Lake passage. The end of the deep part of the river, after this landslide, was at the present Kemmenobrodsk, or Kemmenu-Aboruri as it was known to those who wished to go southwest to Dariel Pass; or Kemmenu Jakin or Eachon, as it was known to those who wished to go northwest to the Graikus and Achelous Rivers an,-.1 to Amalthea's Horn, or through by the Cerberus-Jakin delta mouths, the Sharisharadon and Shar Shuppi of the Egyptians and Phoenicians, at Olonchuduk, into the sea of Salentchuk, i.e., the old and original Atlantic Sea.

The Achelous, now Kalaus, was the original home of the Graiae-ach or Greeks, at the junction of the Graikus River with the Achelous. The adjoining river, the Aegi River, was originally a pass of the Achelous delta, but Herakles (not the Phoenician god, whose name was Hercules or Kur-Kai, but the Greek adventurer, Herakles) at the request of the Caledonians or Chaldi i.e. Chaldeans, dammed it, and so turned all the overflowed portion into fertile land. Am-Althea means "plain of Aletheia or Alytta."

East of the Achelous were the Arimi and west of it the Arim-Az-Fi or western Arimi. This is why the Graiae (which name means "old women," probably because the Graiae wore long black dresses, both men and women) were said to have one eye, for as Herodotus (4; 26) points out, "Arima spu" means "One eye" in the Scythian language.

Incidentally this is proof that the Greeks who built the Greek temples and had the Greek customs and language would not have been late colonizers, but were the original Greeks, for they were there before Perseus, in his wars against the licentious practices of the Tammuz worshippers, (the Tammuzons who came from Mt. Thammuzeira, near Mt. Elbrus; the Amazons of the Greeks) left the Crimea to found, after conquering the Amazons, the Persi nation.

At the foot of Mt. Thammuzeira or Tammuz Schar flowed the AramUdon down which the Amazons came in their conquering passage after defeating the nations at the foot of Mt. Elbrus (the El Baris and Huburis of the Deluge traditions) and at the junction of which with the Tammuz-Alontas they founded the city of Chersonese.

Another famous river was the Kur, whose eastern valley was known (and possibly the whole eastern district) as Metsara, the Metsara of Abraham and of Cyrus. It will be noted that the old name of the Jora was Kem-bu-su (Holy Water River; the Champsis of the Scythians) in its upper part, and as Abaran in its lower part, before joining the Kur and Alizon, and that it is near the plains- of Ad Shinour and Chaldan, and Pirata, and was the winter home of the Urie of the Koissu or "Calling" rivers, the "Kissu" district of the Babylonians, from one of which, the Kazikimik Koissu, came the first dynasty Egyptians; and that the Avar Koissu and the Ach-Su tribes had the city of Psiddach (Sutech or Typhon), in what was probably then Sar-Veden, where one of the great Cabiri pillars was; the other and the chambers being at Achmed on the south side of the pass. The Alizon was, as I have shown elsewhere, the Elysion of the Greeks, and Makaria the Kur-Dilumn of the Babylonians. Its inhabitants were also called Alaed or Kelti, and those to the west were called Iberi.

PENINSULA OF TAMEN

The rest of the map needs little explanation, except perhaps the peninsula of Tamen. Tamen, or Ta manu meant "the domain of the god." Compare Greek temenos. The history of how the gods came to be in the west is a long one. It is sufficient to say that the Greek mystery traditions about Uranus, (Urie) in the East, Cronus in the west and Zeus, near Amalthea's Horn, appear to represent actual facts in history-wars and settlements of the isthmus. The small negrito race was very superstitious, troglodytic, and had many gods, but the large Scythian (Thini) race, the masters and the metal workers, worshipped the Taauti or mountain-top proclaimers or directors, the Theoi. The relation was somewhat like that formerly between the Arabs and the Negroes on the east coast of Africa. The peninsula of Anapa was the nesus of Circe, and the Circetae of that district (the Scorpion people of Gilgamesh) were the archers of Tamen. The kabardi was a long lock of hair on the left side of the head, by which the nobles used to fasten on their crests i.e. deer's heads, wolf's heads, etc., by twisting it round them. It is the symbol of the gods of the Sindi or Indi in India today and was used in Egypt. The story of Circe, the Kirke or sorcerer and her animals, came from this practice. Colchis, the Kalacha Aea, was originally in the Tamen Peninsula. The dead were tied up in red ox skins, called "meschet"; or silk bags, in the eastern or Baku Serach; or in earthen jars made to look like ox hides, in Susa. Hence the term Phoinix and the legend of the bird. Why all of the

gods were driven out of the isthmus except Zeus and Athena; the history of the wars of Osiris, of the Mesen, etc.; of the use of the reflecting telescope in the Caucasus; of Ramman-Anthu, the eastern Caucasus god of justice; of Feni-Kale and Anyalius, and the white land of Achilles, the sun lions of Gilgamesk and Israel and Medea, and hundreds of other matters must be left till another time.

It will encourage archaeologists to know that, as stated in the previous articles, all public buildings, including temples, were originally underground and many can be located.

I have found that for many thousands of years all important civil and religious assemblages (even that of the Greek Areopagos), were held deep underground, and have been for years urging the use of electrically driven core drills in archaeological work. And this not only in the Caucasus, where Alexander's treasure probably lies hidden with the old records of Achmeti, but in Greece, Egypt, Palestine, Italy and Spain. The old records are not lost forever, they are merely hidden in the old underground chambers.

MYTHARCHEOLOGY

This new method of working, by the tabulation of myth references, and by place names, has a certain analogy to geology, the names and references being, as it were, historical fossils. And as the science of geology was built up from the study of its fossils, so we have a new science built up from these fossilized traditions and names, which may perhaps be called "mytharcheology." It has certainly been fruitful in results and we may expect that for many centuries the Caucasus isthmus will be very intensively studied by archaeologists.

RACES OF ISTHMUS

An interesting point has developed in the work, i.e., that there apparently was but one original race, a small brown negritic one, which developed under troglodyte conditions, in the western isthmus, into a Negro race, and under life in the marshes in the northern isthmus into a large white race. Sufficient evidence has not yet been obtained to state this definitely, but it seems probable. Incidentally the blue mask of Osiris shows that he was originally a Negro god.

INDEBTEDNESS

The writer is of course indebted to hundreds of other workers. More especially to Petrie, Sayce, Clay, Chiera, Budge, Breasted, Olmstead, Jansen, Peters, Rawlinson, and the other great masters of archaeology. And I am also most grateful to E. Gilchrist of Brookline, one of Sir Robert Hart's men, for his help in problems relating to Chinese records, and to Mr. R. E. Briggs of Boston for his assistance in connection with Negrito and other questions.

CHAPTER 10

FINDING A KEY TO THE ROUTE DESCRIBED IN THE SACRED WRITINGS OF THE EGYPTIANS

(Published in the Christian Science Monitor, March 18, 1924)

IMMEDIATELY the secret of the Egyptian "Book of the Dead" is known, its phantom of a monstrous and debased theology disappears; as we read we find ourselves in the presence of a fine morality and of a strange and touching hope.

Of the morality the following from the "Negative Confession" will be evidence:

O God of Light and Truth, I have not laid waste the lands which have been ploughed.

O God of Bast, I have never pried into matters to make mischief.

O God Child, I have not made myself deaf to the words of right and truth.

O God of the Secret City, I have made no man to weep.

O God of Faces, I have not judged hastily.

O God of Nu, I have not made haughty my voice.

O Kau, I have not sought for distinction.

The morality was for all to see, but the hope was secret; it was that after the end of existence in Egypt one might go back to the Mother-Land, the Siris valley south of the Caucasus mountains; the land where the sun rose over Bakhu (Baku) and set over Ta Manu (Taman); the land from which Egypt had been colonized and where the Sekhet Eli (Sakataly) were.

The "Book of the Dead" gave complete and detailed instructions for reaching this Mother-Land; how one must go, what cities and tribes he would come to, by what landmarks he would recognize places, and what he would find when he got there. The instructions are so precise that they are of great value to students of ancient geography and they will bear intensive study.

As will be seen later, the instructions are quite plain. But the priests did not desire that they should be known to any except the initiates and so the sections of the "Book of the Dead" containing them, chapters 17, 18, 64, 125, 149, 150 and others, were so written that only the initiates who had the key, a very simple one, could understand them.

SOURCES OF THE EGYPTIANS

The early geographers knew that the Egyptians and the people of the south Caucasus Valley were the same race. Herodotus writing 450 B.C. says, 2;104; "There can be no doubt that the Colchians" (inhabitants of the west Caucasus Valley, which was all that the early geographers had knowledge of) "are an Egyptian race. Before I heard any mention of the fact from others I had remarked it myself. After the thought had struck me I made inquiries on the subject both in Colchis and in Egypt, and I found that the Colchians had a more distinct recollection of the Egyptians than the Egyptians had of them My own conjectures were founded, first, on the fact that they are blackskinned and have woolly hair I will add a further proof. These two nations weave 'heir linen in exactly the same way, and this is a way entirely unknown to the rest of the world They also in their whole mode of life and in their speech resemble one another."

Though Herodotus was a remarkably accurate observer and studied the subject on the spot and checked them by observing the comparative thickness of skull. (Herod. 3;12) ; his conclusions have been questioned. They are, however, supported by much other evidence which I have given in "The Deluged Civilization" and have been strikingly confirmed by Professor Newberry in his presidential address to the anthropological section of the British Association which will be found in Nature of Sept. 25, 1923. See also Clay's "Empire of the Amorites," p. 138.

This merely proves that the Egyptians and Colchians were the same race, it does not prove which was derived from the other. Here again there is much evidence. E.g. - Aetia was the old name for Egypt and Siris the old name for the Nile. See Rawlinson's notes to Herodotus 2 ;15. Now the west Caucasus valley was Aeria, the land of King Aeetes, of the Jason legend, see Smith Classical Dictionary; and the Cyrus runs almost the whole length of the Caucasus valley just as the Nile does in the Egyptian valley.

The Paradise of the "Book of the Dead" is thus described by Budge, "Osiris and the Egyptian Resurrection," Vol. 2, p. 155.

A region called Tuat was thought to be situated on the other side of a range of mountains that surrounded the world. On the far side of the Tuat there was a similar range of mountains and so we may say that the Tuat had the form of a long valley very much like the Nile valley; it ran parallel to both ranges of mountains and between them A river flowed through the Tuat valley just as the Nile flows through Egypt.

Examination of the map will show that the valley between the Caucasus range and the mountains of Armenia exactly fits this description.

A conclusive proof is the fact that in the Paradise of the "Book of the Dead" the sun rose over a mountain called Bakhau, "The Mountain of Sunset." And it rose from and sank into the sea. Now the Caucasus range runs into the Caspian Sea on the east and into the Black Sea on the west. And the eastern peninsula is called Bakhu and the western peninsula is called Taman. No place in the world fills the conditions except the Caucasus isthmus, and it does so completely.

There is much other evidence, but this will perhaps be sufficient.

MEANING OF "HORIZON"

The Caucasus range lies inclined almost exactly $23\frac{1}{2}$ degrees to the equator and so on the shortest day of the year the sun rose at Baku, and on the longest day the sun set at Taman, directly along the line of the range.

It was this line of the Caucasus range that the Egyptians meant when they used the term "horizon." It divided their underworld into two parts, the part of the Caucasus isthmus north of the range or horizon being the infernal regions, or Hades, and that south of the range or horizon the Fields of the Blessed, or Elysium. The only way of getting from one to the other was through a gap in the "horizon," the dark and gloomy pass of Arabus or Erebus or Abydos, now called the Dariel Pass.

On the peninsula of Baku is a mountain spur running north and south, with a gap at what is now the pass of Marasy, and west of the gap is a small mountain called Shamash. On the shortest day of the year the sun on rising shone through the gap. at Marrasy or Marash upon the top of Shamash. In the Egyptian "Book of the Dead" this gap is "The Gate of the Lord of the East through which Ra cometh forth" (chap. 109), and Baku was the "Mountain of Sunrise."

In the Babylonian traditions it is referred to as "The Place of the Entering in of the Sun." The gap and mountain formed a primitive observatory and was taken as the place of zero longitude by the Babylonian observatories or ziggurats.

This eastern Caucasus Valley was the holy land of the Egyptian, Babylonian, Semitic, Phoenician, Greek and Persian religions. Sir, Ur and Napahu are equated in the Babylonian syllabaries. Nucha was the birthplace of Bacchus and of the vine; Dilmun, Hypiberea and Alyson were other names of the district, and Erech of the wide plazas was at the other end of the pass of Dariel.

At the other end, the west end, of the "horizon" or Caucasus range was Taman or Ta Manu, the "Mountain of Sunset." The peninsula of Taman projects between the Black Sea and what is now the Sea of Azov, but was then called the "Pool of Maaitis" or Lake Maeatis. The extremity of the peninsula was low, mud flats formed by the Kuban. The Cimmerians or Khemuri lived n the peninsula (Strabo 11;11;5, and the district was so notorious for its dense fogs that "Cimmerian darkness" came to be used as we use "pitch dark." And Lake Maaitis means lake "of the God of the Darkness Land."

PRIMITIVE IDEAS OF THE SUN'S DAILY PATH

To primitive man the sun was a fire in the sky and all the primitive races were fire worshipers. The Ur were fire worshipers from the beginning, so far as can be ascertained. The A1 race originally worshiped A1, the storm god, but later, possibly from seeing lightning set fire to trees or some such incident' as that described in I Kings, 18, came to

worship Al as a fire god and the Ur and Al united politically and religiously and worshiped a twin god Ur-At or Khur-Khal or Hercules, who on account of the similarity of names was sometimes confused with the Greek strong man, Herakles (see Herodotus 2: 44). The Aed or Aet race originally worshiped Ae or Aem or Thaem, the god of darkness, but they also later joined with the Ur and had with them a twin god. Aet-Ur or Neter or Petera.

The Phoenicians, or Kani, or Phoeni, who colonized Egypt, were originally of the Aed or Aet race, worshiped a golden-red eagle, aetos, but later became Aet-Ur. They originally came from a large river-island between the Terek and Sunsha, just north of the Caucasus range and opposite the northern end of the pass of Arabus. They went south through the pass to where it debouches into the Alizon valley and settled there and called it Ta Neter, now Tioneti, and Egypt was settled from there.

THE GODS OF THE HORIZON

So the Egyptians had the gods Ur and Ae or Ae-m or M-Ae (m means lord or god and ae means blackness and t or d means place or land). They took the god Ur as the god of the rising sun and because he appeared to come up out of the Caspian Sea they called him O-s-ur or Osiris (o means water; s means movement of some kind, depending on the connection; and Ur means fire or fire god). The god T-ae-m or M-ae-t they took as the god of the setting sun or of darkness, and Taein-an or Taman or Ta-Manu was his mountain and peninsula just as Baku or Bakhau (the Gate of the Coming Up) (b is gate and h is up so ach or ash is coming up), was the mountain and peninsula of Osiris.

These were the "Gods of the Horizon." For the god as a whole or for the god of noon-day they had the name Ra. (Ra is a later word and its meaning is not known certainly; possibly it is "Space Fire" or "Sky Fire"). Some temples adopted Osiris and others Tem, and there was great rivalry between the temples. The Mountain of Sunrise and the Mountain of Sunset are seldom found in the same religious service, and they even had two routes to go to the heavenly fields, one through "the western lands" to be taken by the devotees of Osiris and the other through "the eastern lands" by the followers of Tem. The allotment of routes appears rather strange but is perhaps explicable.

THE TETS OR PILLARS OF SHU

The primitive idols were posts of wood, asher, and as Khur-Khal was a twin god there were two pillars side by side, Jakin the right hand or eastern one (see I Kings 7) . As they were fire gods, fires were kept burning on top of them. Later when glass was invented a glass protection against the wind called "the eye of Osiris" was placed round the flame and this acted as a quite efficient projection lens system. Green glass was used for one pillar light and reddish-yellow for the other. Herodotus paid a visit about B.C. 450 to the temple of Hercules at Tyre, which had been founded about B.C. 2755 and saw "two pillars, one of pure gold and the other of emerald, shining with great brilliancy at night." (Herodotus 2:44). A good idea of the "tet" may be obtained by knocking the bottoms out of five deep glass soup plates and stacking them together so that they do not touch all

around, or have a thin gap between each stand the next above it, for ventilation, and placing a lamp opposite the middle plate. It makes a better optical system than many modern ones.

The mud flats at the mouth of the Kuban were low and the land of the Cimmerians very subject to fog, so two tets of large size were placed there at Bo-Az (Water Gate of Az, or Az-ov; later this was supposed to be connected in some way with the fact that cattle were taken across there and it became Bos-porus). These were the Pillars of Shu the sun god, i.e. Khur-Khal.

The primitive dwellers on the Caucasus isthmus, not knowing that the world was round and revolved, thought that the sun after coming up from the Caspian Sea and passing through "The Gate of the Lord of the East" and over the Mountain of Sunrise, Bakhau, and over the entire length of the Caucasus range, then passed over the Mountain of Sunset, Ta-Manu, and the Pillars of Shu, and went down into the Pool of Maati, Lake Maaitis, and that during the night the sun god stabled his horses in the north Caucasus isthmus (Greek mythology) or sailed back in his boat to the east and duly appeared from the Caspian next morning.

PHOENICIAN TRADE ROUTE BETWEEN BLACK AND CASPIAN SEAS

One naturally thinks of the South Caucasus valley as the best way to get from the Black to the Caspian seas. But this meant much land travel through hostile tribes and the Phoenicians were sailors and Colchis the western valley was a trade rival.

Looking on the map a line of small lakes, the Manytsch Lakes, will be seen stretching across between the sea of Azov and the Caspian, and the map shows that the water from these lakes flows, part into the Black Sea and part into the, Caspian. The Soviet Government is now digging the passage deeper so as to re-establish navigation that way. But in the time we are now considering, i.e., 1.1,000 to 9000 B.C., before the Caspian had dried up so much (it is now 80 feet below sea level), one could sail direct from the Sea of Azov into the Caspian, and then through the Sea of Aral, all the way to Faizabad. Even as late as 200 B.C. there was water communication between the east shore of the Caucasus isthmus and Faizabad. But the level kept falling and a little after 200 B.C. (the Chinese histories put it as 125 B.C.) the Seres who lived on the Caucasus isthmus established caravan routes.

Even after the level of the Caspian had fallen it was still possible for the Phoenicians to sail from the entrance to the sea of Azov, where Phanagoria (Light-house Market) is shewn on the classical atlases, up the river Kuban or Oceanus and then to pass to the river-island of Ser-Ser or Ur-Ur, between the Terek and Sunsha, and then go through the pass of Dariel or Arabus, and they would find themselves in their own home country of Ta Neter or the Alizon valley. And then they could sail in another boat down the Alizon into the Cyrus or Siris and into the Caspian.

THE TEMPLES AND FOREIGN TRADE

In old times the temples were not merely places of worship; they were the banks, the universities, technical schools, consular offices, boards of trade. The first thing a trading nation did when it started trade with a new country was to put up its own temple so its merchants could get credits, trade information, etc.

I have told elsewhere how the Phoenicians of Sidon, about B.C. 1250, finding that a large portion of their trade had been cut off by wars with the kingdoms of the Euphrates and Tigris, examined the records of their temple Naval College and discovered that in far-back times there had been very profitable trade with countries beyond two pillars called Pillars of Hercules; and how they sent out four expeditions to find these lost Pillars of Hercules, and how they went to a number of places and returned and reported after each expedition; and how the only definite conclusion they reached was that the Straits of Gibraltar were not the Pillars of Hercules (see Strabo 2; 5).

And that the reason they could not find them was because they marked the entrance and exit of the Manytsch Lake route which had shoaled up; the Pillars of Bo-az at the sea of Az-ov end and the Pillars of Jakin (Going Out Place) at the exit into the Caspian.

The Pillars of Jakin are still marked on the latest maps; i.e., Stavka Terekli (Stave of Hercules) on the Times atlas, 71;1;2; and Kerkheuli Juk Jewe (Hercules's Jak beacon) on the Stieler's hand-atlas, 49;0;19. But now, of course, on account of the drying up of the Caspian 40 miles back from the shore, on the Caspian's old shell marked beach.

WHAT THE BOOK OF THE DEAD WAS ORIGINALLY

The mysterious instructions of the "Book of the Dead" are the old route directions of the Phoenician sailors for reaching the Mother-Country of the Phoenicians and Egyptians, i.e. the Alizon valley.

How this came about it is impossible to tell now. It is as if something had kept the Muhammadans from going to Mecca or the Jews from going to Jerusalem for many centuries, for so long a time that the location of Mecca or Jerusalem was finally so lost that it was not known that it was a real place; and that people finally came to believe that it was a mythical place and that the direction for getting there were religious ceremonials and not real traveling directions. Whatever the reason, it is the fact that the directions in the "Book of the Dead" are directions for getting to the Alizon valley, to Ta Neter (Tioneti); which way to go; what tribes would be met; what the landmarks and beacons were.

THE WAY BY THE WESTERN LANDS

The "Book of the Two Ways," which is inscribed on the walls of Tutankh-Amen's tomb, gives both of the ways above referred to, i.e., the one through "the eastern lands" via Pirikan and Lake Van, and the one through "the western lands," via the River Kuban and the Sea of Azov. The latter is perhaps the more interesting; it is given in the "Book of the Dead," chapters 17; 18, 64, 125, 149, 150.

According to these directions one first sails through the Great Green Lake (Mediterranean) and the Black Sea and comes to the land of Restau, at the head of the Pool of Maati (Sea of Azov). But Restau is not the town of Rostow, but the whole land round Lake Maetis, for Res-tau, as is shown by other passages, was really Tau-res, i.e., the ancient Taurus. Such transpositions of syllables are common, e.g., Ur-ab and Ab-ur, and occur all through the "Book of the Dead" and all of the old tradition inscriptions.

As is stated in the "Book of the Dead," chapter 17, Restau or Taurus was the northern door to the underworld. Later this region was called the Chersonesus Taurica.

Next, one goes through the straits of Tches-ert (now Ker-tsch) to the mouth of the Kuban where were the Pillars of Shu. "Now the Gate of Tchesert is the gate of the Pillars of Shu." Shu was the sun god, i.e. Ur-Al, or KhurKhal. Hercules. On landing at the "city north of the olive tree," i.e., the site where Phanagoria was built later, the departed performed a religious rite, i.e. placed a glass bowl over a lamp and buried it by the side of the Kuban. He then dug it up again. This symbolized the death and resurrection of Osiris; Osiris was the flame and the glass bowl was the "eye of Osiris," i.e. the supposed transparent hemisphere of the firmament.

He was then put through a test by the Fenku or Phoenicians. He was asked the riddle, "Who is he who is gathered together under the flowers and sitteth in the olive tree," and only the initiate would know the answer, "Oil (mineral and olive), Fire or Osiris." If he could not answer the pass words and tests he would be killed.

The "Book of the Dead" then gives the various tribes and countries he had to pass through going up the Kuban. The Watchers are the landmarks, i.e., certain mountains, etc. The word generally translated "pools" or "islands" also means river expansions.

Finally he comes to the eyot of SerSer or Ur-Ur or Tur-Tur; surrounded by the Terek and Sunsha. The city was also called Erech, in the Babylonian inscriptions telling of the exploits of Gilgamesh. The city on the eyot had very high walls of burnt brick, more than 300 feet high, Nebuchadnezzar built the walls of Babylon after seeing them. The southern walls were infested with snakes. Anyone who has seen an old wall down south on a chilly morning will recognize the origin of the Egyptian and Phoenician serpent frieze. The river Sunsha had much oil floating on it, Grosnyi, the center of the Baku oil district, is on it, and it was only necessary to poke a stick in the ground and oil would collect (Ency. Brit. art. Caucasus), which sometimes caught fire; and near by were the "Ever Burning Fields" of the Persian Fire-worshippers.

The departed stayed in the city for some time, studying certain books (the Acheruntici Libri) and after a time became quite wise. Then he obtained escort to go through the pass of Arabus or Ab-tu, which was opposed by "men of hostile face." But he was armed with a knife and finally came through into Ta .Neter (now the district of Tioneti) .ie., "The Land of Aet-Ur."

At the entrance of the valley was Ashmeti or the city of Eshmen, the eighth Cabiri, and Kapare-uli, or Sippara of the Sun, from whose great stele "cippus" was possibly derived. A little further down the valley was Schemochada-Scheni or the "Sun-City of the Shenit," where the shenit or overseers were. Still further down was Sekhet-Aaru, i.e., Sekhet-Sham, now Sakat-uli (Sham and Eli both mean "sun," the "Fields of the Sun." Then comes Melikarkh, sometimes called Harmakis; then Achssu, then Baku, the Flaming Fields, etc. Mzchet, where King Pepi wished his estate, is up near the head of the valley, near the Sun City of the Shenit. It is very interesting to go through the valley with a Stieler's atlas and the "Book of the Dead"; one feels quite like a tourist with his Baedeker.

NEED OF ARCHAEOLOGICAL EXPEDITIONS TO CAUCASUS VALLEY

In a short article one cannot give a very full description of the route, ceremonies, etc. It is hoped enough has been given to indicate the interesting nature of the subject, and possibly to lead to one or more archaeological expeditions to this motherland of mankind, before the rapidly growing flood of immigrants tears down the old monuments for building material (no governmental regulations can prevent this) and otherwise makes archaeological work difficult or impossible.

CAUCASIA, MOTHER OF THE GREAT CIVILIZATIONS

THE writer's prediction that "the eastern shore of that inland ocean known to geologists as the 'Asiatic Mediterranean', and more particularly that part in the neighborhood of its eastern vestiges, the Balkhash and Dschalantschash Seas, will be found to have been the seat of a great civilization at least as old as that of Babylon" cannot of course be verified until the sites are excavated. But we have now news of two discoveries which are in agreement with it.

The first is the statement by the great Russian authority Professor Rostovtzeff (Irans and Greeks in South Russia, page 197) that "In the Altai region" (north west of the Dschalantaschash Sea) "tombs have been discovered resembling those of the Kuban."

The second is the discovery, by the eminent explorer Sir Aurel Stein in the Tarim Basin and by Russian archaeologists in the region south of Lake Baikal, of evidences of European contact.

Neither of these is proof, or even evidence, but so far as they go they are consistent.

DETERMINATION OF SHORES OF OCEAN OF SELENTUSH

One way is by the old beaches, shell deposits, etc., as described in the geologies, or in the Encyclopedia Britannica article "Caspian". The other is by the place names. If the Atlantic Ocean were to dry up and we wished to find its western shore we would note groups of names, Nova Scotia, New Brunswick, Maine, New Hampshire, Boston, Lynn, New London, New York, Maryland, Louisiana, etc.; and would say that those places were settled from England and France and not from the intervening nations which occupied the former ocean bed. And, from the type of names and knowing something of the history of England and France, we could fix, within a century or so, the date of colonization.

Now, starting from the south shore and going east, we find a long string of place names distinctive of the Caucasus Isthmus. There are three main groups of these

1. In the neighborhood of Faizabad in Buchara.
2. In the neighborhood of Kohan in northern Ferghana.
3. West of Lake Balkasch, the Land of the Seven Streams, near the Dschalantaschash Sea.

Many are of a type which we can date as not earlier than 6,000 B.C. But in the second and third groups we find names not later than 2,500 B.C. and in the third group names not earlier than 1,000 B.C. This we can understand if we remember that the Ocean of Selentush (the "Asiatic Mediterranean" as geologists call it) dried up gradually. First Lake Balkash was cut off from water communication with the Caucasus, isolating the

Seven River district and the Dsungarei district. But boats could still go from Ferghana and from Buchara down the Sir and Amu rivers to the Sea of Aral, then called the "Lake of Kithay" (Cathay?), and thence into the Caspian. The authority for this is Strabo. But about 250 B.C. the waterway between the Aral and Caspian had apparently nearly dried up for, about that time, the Sirici, living in the north Caucasus isthmus, instituted caravan transportation between India and Babylon (Strabo, 11.5.8). It will be noted that Faizabad is only 100 miles from Chitral, from which another hundred miles down the Kunar valley brings one to the Khyber Pass and India. From Kokan it was only a very short distance to the Tarim Basin, and a clear route thence to China.

In the district south of Lake Baikal where the Russian archaeologists have just made their discoveries the place names can hardly date earlier than 250 B.C. For example "Ekure Chalcha", about 200 miles south of the lake. This is good Babylonian or Baku Peninsular for "Principal Place of the Great (or Mountain) House (or Temple). But the form is one which can hardly have come in before 400 B.C. so we may perhaps say that this is a land caravan importation.

WHY THIS CIVILIZATION HAS NOT BEEN DISCOVERED

One sufficient reason is that all explorations, so far as known, have been made in the Tarim and similar districts on the east side of the mountain ranges bordering the Selentush Ocean. Any old civilization would have been on the west sides of these ranges where we find such names as Chabar; Kent; Urdshar; Kok-su; Sarkansk; Ak-su; Tschingis; Arganatinsk; Bakanass; Chan-tau; Sarkansk; Dschangys-agatsch; Kara-bulak Ubinsk; Urunchai; Talawka; UstKammenorgorsk; etc. Many of the terminations are of course modern Russian; the last two names for example would be Talonta and Kammeno. When these sites are excavated we may reasonably expect to find something of the civilization we are seeking.

WHY IT WAS LATER THAN THE CAUCASUS CIVILIZATION

Primarily the evidence is in the form of place names. The other evidence is slight. For example, the name of the Chinese Empress who is said to have discovered silk is given as Se-lin-tschi and there is some reason for believing that this was simply the name of the sea of Selentchu or Selentash, (the Sea of Selene, possibly because it had tides and the Black Sea had not), the Gelenchuk, Selentchuk, Olontchuk, Alontas and Asslandus, of the maps of the Caucasus Isthmus.

October 6, 1924.

THE MORNING LAND OF THE CAUCASUS

THE first announcement, made in a paper presented to the American Association for the Advancement of Science, 1899, of the writer's discovery and proofs that the so-called myths and myth lands of the Greeks and Semites were quite accurate histories of events which took place in a little known distrio, the Caucasus Isthmus, was made at a time when there was not much general interest in the subject. It was thought best to complete the work before publishing further.

The material had been collected and put in shape and in part written in final form in 1922 when the announcement of the proposed re-opening of tile Manytsch Lake route and of proposed colonizations both north and south of the Caucasus mountains indicated a possible loss of valuable archeological material and it was decided to publish at once the part which had been written. It appeared in 1923, "The Deluged Civilization of the Caucasus Isthmus." Other notes, on the location of the pre-deluge records referred to by Eusebius, Berossus and Josephus, and on the language in which the original Book of the Dead was written were published in Nature, March 1st, and July 26th, 1924; and a description of the route of the Book of the Dead in the Christian Science Monitor, March 24th, 1924.

RECEPTION OF LATER ARTICLES

These later articles and the book have met with a reception for which the writer is grateful and the authorities in the fields concerned have accepted the conclusions substantially without dissent. E.g. Dr. Albert T. Clay the great Semitic and Babylonian authority in his "Origin of Biblical Traditions" and personal correspondence written shortly before his death, to which I have his permission to refer; Sir Flinders Petrie the most eminent authority on Egyptian archeology and its allied and associated problems, in "Ancient Egypt," Per: 1924; and many others.

ARCHEOLOGICAL WORK VS. PLACE NAMES AND TRADITIONS

Acceptance of a theorem is and must be conditioned upon corroboration by all possible sources of evidence and the reviewer in Nature and some of those referred to above have emphasized the importance of confirmatory archeological field work in the Caucasus districts. This is true, the spade alone lays bare those sound foundations on which history must be built. But there are other, and within their limits equally accurate and scientific instruments which may be used for locating the structure.

The triple place-name system disclosed and explained in the "Deluged Civilization" is one of these instruments and as shewn, its results are very sure. As an illustration geologists are divided in their opinions as to the extent of the vast inland ocean which they call the "Asiatic Mediterranean". It was originally held to extend eastwards from the Caspian to include Lake Balkasch and to the Altai range. Of late, and influenced by later geological evidence, it has been believed not to have stretched so far east.

But aside from geological difficulties, inspection of the map shews a string of purely old Caucasian names round the eastern and southern borders of Lake Balkash and in the Altai, e.g. Kok-su; Tau-Kum; Bakanash; Ili; Sungaris; Astchibulak; Ach-Irek; Kent; Tschimi-Kent; Olon-Bulak; Ach-su; Urta-Saryk; Sary Bulak; Alan-Kuduk; Terek; scores of others. And these are only found round the level of the "Seven Stream Land" where the old shore would have been. And Rostovtzeff has pointed out as a curious and unexplained fact, that tombs have been found in the Altai resembling those on the Kuban in the Caucasus, (the reason for this we shall see later).

We may therefore be sure that the Caucasus and the Altai and Lake Balkasch regions were in water communication. And further when we remember that the original name of the so called "Asiatic Mediterranean was (see "Deluged; Civilization") the "Ocean of Selentchuk" (the original "Atlantic Ocean"), and note that the small sea to the east of Lake Balkasch is still named the "Dschalantaschash Sea" we may be fairly sure that it was an all sea route.

And in this connection we may think of the Chinese tradition that it was "Se-ling-tsche" who brought silk into China; as we now know from Gadira in modern Daghestan, where the pre-historic silk culture, the "golden fleece" of the Argonauts was, and which was exported west to Cos by the Tel-Kaini. And how Alexander built a great fleet in the Caspian, shortly before his death and told his soldiers that he had reason to believe that the Caspian was connected by water with the ocean east of India. And how the land caravan routes from the Caucasus were initiated by the Seres about 250 B.C. as stated by Strabo and confirmed by the Chinese histories, and how up to that time the goods were brought from the east by water from Faizabad to the south Caucasus valley, Faizabad being less than 200 miles from India, via Khyber Pass and Chitral Valley. The ocean of Selentschuk dried up slowly, even as late as the 16th century the Caspian and the Aral (then called the Sea of Kithay i.e. Kathay) were believed to be parts of the same body of water. (The rate of drying of this old ocean bed is given in the Russian government reports, and varies considerably as the seasons are wet or dry.)

Place names in long settled lands may, as we know from our excavations in Egypt and Mesopotamia, be more permanent than geological features. And even in comparatively modern lands; Osla, the capital of Norway was founded 1058 A.D., its name was changed to Christiana in 1624, and in 1924 the old name Osla was restored. Norway is one of the most advanced states in the world, but the Norwegian post office commission which had charge of the notification work discovered that in quite a few of the more remote districts the capital had never been known as Christiana but always and continuously as Osla.

THE OLD PLACE NAMES OF THE CAUCASUS ISTHMUS

During many thousands of years the inroads into the Caucasus isthmus were without permanent effect; the inhabitants merely retreated into the mountains and when the strength of the invaders decayed came down again. There are some slight traces of the Alexandrian rule of Hyrcania and of the Turkish conquest in the neighbourhood of Derbent, but that appears to be all. In 1829 Turkey ceded the isthmus to Russia which for

some years tried to conquer the Circassians or Adighi. Military spies with a knowledge of surveying were sent throughout the isthmus and a military staff map was published in 1848, of which the writer has a copy through the kindness of the British War Office. This gives all the old place names as they were before the Russian occupation of the territory, which was not complete even in 1875. Taken in conjunction with the map of Ptolemy, the description by Strabo, and other and later important maps, of which the Royal Geographical Society of England has a most complete and extremely valuable set, and the geological map of Felix Oswald of Nottingham, Eng., we are well equipped for the application of the triple place name method.

PLACE NAMES AND MYTH-HISTORY

When the writer's observation of the curious gap in myth geography between Sicily and the coast of the present Atlantic Ocean, and his realization of its importance, had led to his discovery that the far west block of myths had been misplaced and rightly belonged to the old original Atlantic Ocean or Ocean of Selentchuk, or Aet-Olontchok, to the east of the Caucasus Isthmus, it was evident that there should be references to the occurrences related in the Greek myths in the literatures of the other lands in the neighbourhood of the isthmus, and that the best, and in the end the shortest, way would be to collect and tabulate all such references.

October 1, 1925.

ZENITH OF THE BABYLONIAN ASTRONOMERS

THE Encyclopedia Britannica (article, Babylonia) says "Babylonia astronomy goes back to the time when the Accadai (Agadi) had not yet descended from their mountain fastnesses. The zenith was fixed above Elam and not above Babylon and 'The Mountain of the East', the primitive home of the race, was supposed to support the firmament.

The more exact location of this zenith is a matter of considerable importance. In an article "The Key to the Book of the Dead" it was shown that the Book of the Dead was originally written in the language which Clay calls "Amuraic . . . the early Semitic language . . . which in time developed into what has been preserved for us and which we call Phoenician, Aramaic, Biblical Hebrew, etc." and that, while the main body of the text has been correctly translated, place names have been translated which should have been left as they stood, and personal names have been mis-translated as made up of roots of a different language from that in which they were written. The situation is somewhat as if an English translation of Caesar were found in 4000 A.D. and Caesar and Rome believed to be mythical and Caesar translated as "He who takes things by violence" (Seizer) and Rome as "The Wide City" (Roomy). For example, Osiris Urt-ab, which in Amuraic means "Osiris, son of the Sun" (see chapter 43) is translated as "Osiris Still-Heart". Where the syllables are reversed, as is frequently the case in Amuraic (see Jastrow, Bab. & Assyr. p. 222 and Clay, Orig. Bib. Trad. p. 167), the appellation Ab-ur is left untranslated (see chapter 42) . Iris and Nephthys, the goddesses of morning and evening, are called the "Ur-Urti" goddesses; the term is translated but it is pure Amuraic for "Light and Darkness". Qemurte is translated as "City of the Inundation", but should not be translated, as it is Kemurtu, and so on.

When the original language is thus taken into account, it is found that the hidden land of Amen where the sun rose out of the water (the Caspian, where the god Kha-Ra, the Greek Charon, transported the dead), passed over the mountain of morning, Bakhau (now Mt. Bakhar near Baku) along the mountain range of the horizon, with its gap (the Caucasus range and pass of Dariel) and set over the mountain of Temu, Ta-Manu (now the peninsula of Tamen, the temenos of the sun-god) into the Pool of Maatis (Lake Maeotis of the Greeks, now the Sea of Azov), was the Caucasus isthmus, the land of Aia of the Greeks. And that the directions of the Book of the Dead were very precise directions for reaching the valley of the Cyrus (now the Kur). Since the old name for Egypt was Aetia and the old name for the Nile was Siris (Rawlinson, note to Herodotus 2.15) and the Egyptians and Colchians were of the same race (Herodotus 2.104 and 3.12), this was probably (there are many reasons for holding this) the old home land of the Egyptians.

The route given is very precise (there are two, but I refer to the main one) and leads through the Mediterranean, up the west shore of the Black Sea, across the isthmus of the Crimea and the district of Rostow, through the lake and river system and then down the west shore of the Caspian and up the river Pir-ata or Ata-ar to Sebakhu and Kemartu and Lake Kau and the Mountain Bakhar. Thence south into the Kur-Alizon valley and Sakataly. In following the route only the old place names must be used. These are best found on the British Staff Map of 1885, for a copy of which I am much indebted to the

War Office, as this was made before the country had been settled from Russia. Also the Stieler's Hand Atlas of 1902, sheets 48 and 49 and the Times Atlas of 1897 will be found very useful. The best map of all would probably be the Russian Staff Map of 1847, made long before the country was invaded by Russia, but so far no copy has been available. Strabo and Ptolemy will also be found of much use; Strabo, for example, gives the city Beta; and Ptolemy the location of Alexander's pillars, now Scandrjukjowsk on the Caspian. Kerkulijukjowsk is now about forty miles inland, west of the mouth of the Alontas of the classical atlas, now Ta-lowka. Shari-Shariket and Shari-Sapu (now ShariSharidon and Shari-Suppu) are shown on the International map, North, L. 38.

The reason why the knowledge of the zenith is important is this. In the neighborhood of Mt. Bakhar (see Staff Map, sheet I, 8) we find well-known Babylonian place names, i.e. Shemacha and Marazi, the mountain and gap of the sun; Eshagil, Erech, Shirappik, Azar-Akanna, Kassim-kend, Agadi-kend, Kissu, Kurkur and Konack-kent, which, since it is on the Apsu or end of the Caucasus range, I take to be possibly Apsu-anaki (and possibly Enoch or Kanach). This gives us a meeting point of the Babylonian and Egyptian civilizations. The Gilgamesh story relates to the same district and I have shown elsewhere that the rivers Kacheten (Cocytus), and Uroch (Pyriphlegethon), which flow into the Ast-ach-su (Styx) are near by and that the route of Ulysses was up the Kuban. The writer's work along this line has met with 'much earlier recognition and acceptance than might have been anticipated, and it is now proposed to send out a preliminary expedition. Obviously it is advisable to fix definitely, if possible, the places to excavate.

Now, east of Mt. Bakhar are two peculiar islands, now known as the "Two Brothers", between which, one one day of the year, the sun may be seen to rise from Mt. Bakhar. West of Mt. Bakhar are some curious rocks which possibly may be a primitive Stonehenge. There are reasons for believing that Bakhar may have been the site of the primitive observatory of the Babylonians, which fixed their zenith.

June 11, 1924.

PLATO'S ATLANTIS WORD PUZZLE

No edition of Plato, with which I am acquainted, calls attention to the fact that his story of Atlantis contains a very simple but interesting and important cipher.

It is difficult to see how it has escaped notice, for Plato specifically states that the names are given in cipher and specifically states the nature of the, cipher, one well-known to adepts of his time, and specifically gives, and states that he gives, along with one of the names, its cipher solution, so affording a means of checking the method.

To quote Critias, sections VII and VIII:

"Yet before we narrate this, we must briefly warn you not to be surprised at hearing Hellenic names given to barbarians; and the cause of this you shall now hear. Solon, intending to make use of this story in his poetry, made an investigation into the *power of names*, and found that the early Egyptians who committed these facts to writing transferred these names into their own language, and he again receiving the *meaning of each name*, introduced it into our language . . . and to the twin born after him who had received for his share the extreme parts of the nesos (land) towards the Pillars of Hercules, as far as the region which now in that country is called Gadeirica, he gave the titular name *which we Greeks call Eumelus, but which the people of that country call Gadeirus*."

The "power of names" cipher was a standard international cipher used by scholars of that and earlier and later ages. By it a name, to be correctly translated, must not only mean the same thing as the original, but the letters of each, read as numbers, must, when added, give the same sum. To take an example from Berossus (Eusebi Chronicorum, Liber 'Prior, Schoene, pp. 14-18). "The ruler of them all was a woman whose name was Omorka, which in Chaldean is interpreted Thalath, and in Greek Thalassa; but by numerical equivalence it is Selene."

The international number-letter system, omitting now discussion of modified values given to some of the "hundreds" letters, was:

	1	2	3	4	5	6	7	8	9
Units	a	b	g	d	e	F	z	<u>e</u>	th
Tens	i	k	l	m	n	ks	o	p	kh
Hundreds	r	s	t	u	ph	ch	ps	<u>o</u>	sh

(F is the digamma which may be taken as v or w; e is eta and o is omega)

Taking the example given by Berossus, we have:

Omorka is numerically 70,40,70,100,20,1, the sum of which is 301:

Selene is numerically 200,5,30,8,50,8, the sum of which is 301.

And so Selene is considered to be the perfect translation of Omorka.

Taking next the example given by Plato, of one of the Atlantis -names, i.e. that Eumeles is the Greek translation of the Egyptian Gadeirus, we must remember that Solon, who tells the story, lived several hundred years before Plato and spoke an older form of Greek, and that even if Plato did give the spelling as handed down to him, it was probably corrected as old-fashioned by his editors. So we must be prepared to change the scientific spelling of the Greek grammarians back to the old spelling of Solon's time. According to the rule of the cipher, Gadeirus and Eumeles must mean the same thing. Since Gadeirus is Egyptian, it can only be connected with the root Gad, meaning "happy". So Eumeles must mean "happy" and, on looking in Liddell and Scott's Greek Dictionary, we find the word eumeles and that it was used by the poet Plato, who lived in the time of the philosopher Plato, in the sense of "agreeable". So the first condition is fulfilled.

For the second, we have Plato's statement that the name was a titular one of the land of Gadeirica and, on looking in Liddell and Scott again, we find that the proper Greek for an inhabitant of Gadeirica is Gadeireus.

Gadeireus is then 3,1,4,5,10,100,5,400,200 and the sum is 728.

Eumeles is 5,400,40,5,30,8,200 and its sum is 688.

They do not agree. But, looking in our Greek dictionary, we find other words, such as eummelies, from eu and melia, also emmeles, etc., showing that the M was commonly doubled, and other facts indicating that Eumeles was originally spelled with two Ms and that, for scansion and to avoid confusion, one M was dropped later by the grammarians. So we have:

Eummeles which is 5,400,40,40,5,30,8,200 and totals 728, the same as Gadeireus, and the second condition is fulfilled; as of course it must be, since Plato gave it as an example.

We can now proceed somewhat confidently to solve the rest of the cipher. Take the name of the mother of Gadeireus, i.e. Klito. Its meaning is "the end", (Greek Klitos). What name of an Egyptian woman means "end"? Plutarch, in his "Iris and Osiris", section 38, says: "for which reason they call Nephthys the 'end' and say that she is the consort of Typhon."

We know that the true spelling is Naphthys (see Herodotus, 7.193) and that it is the word from which naphtha is derived. So we have:

Klito is numerically 20,30,10,300,800 and sums to 1160.

Naphthys is numerically 50,1,500,9,400,200 and sums to 1160.

So this is the correct translation of the cipher.

Klito married Poseidon, or in old Greek, Poteidaon, whose Egyptian equivalent is Typhon.

Poteidaon is 80,70,300,5,10,4,1,800,50 which sums to 1320.

Typhon is 300,400,500,70,50 the sum of which is 1320

and as Plutarch states, supra, Nephthys married Typhon.

Atlas is Harmakhis (the Pillars) .

Atlas is numerically 1,300,30,1,200 which sums to 532.

Harmakhis is 90,1,100,40,1,90,10,200 which sums to 532.

And now go on with the story. Solve the other names and you will be interested. Atlantis city was at the hot springs near Pjatigorsk, north of the Dariel Pass. The mud flats Plato speaks of have now been solidified. You will find Gadir on the old maps to the southeast of Atlantis.

December 1, 1927.

THE EGYPTIAN TEN PRE-DELUGE KINGS OF SOLON AND PLATO

THE first draft of "The Deluged Civilization of the Caucasus Isthmus" contained no reference to Atlantis. The discovery that, after repeated expeditions, the Phoenicians had pronounced the straits of Gibraltar not to be the true Pillars of Hercules; that the real pillars, the Kemmenu or Chamminim of Boaz, were at the entrance to the Sea of Azov, the Az-ubbu or Western Water Gate or Harbour; that the old Mid-Asiatic Mediterranean of the geologist; was formerly known as the At-Alan-Tschack or Sea of the Land .of the Alans that there was water communication between the Black (Ach-Sini) Sea and the At-Alan-Tschack via what are now shown on the maps as the Manytsch Lakes, Olont-Chuduck and the Cerber-Jakin (Cerber means mouths) ; and by a more southern route, near Pyatogorsk, later blocked by land-slides; the identity of the customs, rites, ceremonies, size and configuration of the land with that of the North Caucasus isthmus; its position given in Diodorus Siculus as next the Amazons, whose position is known from Strabo, and others; the fact of land invasions to and from Scythia and Thrace, etc., were all of interest But it was felt that their inclusion might prejudice the reception of the other results given in that book.

When it was realized however that Plato was the first to disclose the existence of the ten pre-Deluge kings or tribes, for he wrote 100 years before the time of Berossus, and aside from the fact that Solon lived 150 years before the time that Ezra compiled the Jah and Priestly lists and the Babylonian cuni form inscriptions were not revealed until recent years, it seemed advisable to translate the list he gives, by the method he indicates in Critias, VII. Trivial as the system may now seem, it must be remembered that for many centuries it was used by historians. An example is given in Berossus, i.e. the equivalence of Omorka and Thalatta and Selene.

One or two examples from Plato will be sufficient. He states specifically (Critias VIII) that Gadaireus has the same meaning and summation as Eumeles. Gadeireus is spelled in only one way (see Liddell and Scott), so we have 3,1,4,5,10,100,5,400,200 summed or 728. There might be some doubt about the length of the second E in Eumeles, but the Semitic root G'd has two meanings, "fortunate" and "strong" and Eumeles with the short E has exactly those same two meanings. So we have 5,400,40,5,30,8,200 summed, or 688 This is 40 short. But we would expect a double M with the short vowel and in fact Liddell and Scott gives eummelies for "well-ashed", taken from Homer From this and other authority, and the statement that the names are equivalent, we are justified in using the double M, which adds 40 and makes the two equivalent in value i.e. 728. Incidentally this and other words indicate that the original spelling was that of the time of Solon and not of Plato and so make it probable that the story did come from Solon.

Taking next Klito. This means "the End" and so does Nephthys, (Budge, "Legend of Horus", p. 243) . Klito is 20,30,10,300,800 summed or 1160. Nephthys is 50,1,500,9,400,200 summed or 1164. But there is evidence that the correct spelling of the name of the sister of "Osiris who sitteth in his olive tree" was "Naphthys" and this makes the names equivalent i.e. 1160. The root is also found in Herodotus 7.183, Aphetai; in Japhetus, Neptune, Aptu, Apaturia etc. The root is F-aet. This and many others, perhaps

all, of the early constructions may be understood from examination of the languages round Lake Urmia. For example the use of "son of" for the possessive case; "lord of" for "very", etc.

Poseidon, the "Earth Shaker", the husband of Klito, is of course Sutekh, husband of Nephthys. Poseidon does not sum with any Egyptian deity but if we go to what Liddell and Scott give as the old spelling, i.e. Poteidaon, we find that this gives 1320 and sums with Sutukh, for which we have the well known authority of "Sydyk". Atlas equates with Harmakis, 532, taking the initial H as guttural H, that is KH, for which there is ample authority. And so with the other names, noting that Leucippe does not necessarily mean "white horse", but that "Leuke" may mean "wolf" and that the compound "hippo" is very frequently, in fact almost always except in late names, to be taken as the Greek rendering of the Phoenician "ubbu", water-gate or harbour.

Translating these names, Plato's ten pre-Deluge kings appear to correspond in the main with the lists of Berossus and Langdon's - fragment more closely than the latter lists do with the Jah and Priestly ones. The spelling certainly confirms Plato's statement that the list was made long before his time and was Egyptian, But it is advisable that the correspondence be checked by other workers, especially by men who have a much greater knowledge of the temporal . variants of Egyptian names than the writer has; and this note is published in the hope that some such scholars, especially those having also an acquaintance with Babylonian languages, may give the matter consideration.

The connection between the Aral (Kithay) and the Balkash Seas has lately been questioned by geologists, but evidence will later be submitted to show that they resembled the North and Baltic seas, a long peninsula, the Kara-tau, nearly, but not quite, separating them. Note the .place names east of Balkash, thousands of years older than the "Ekure Chalcha", (E-kur Chalacha, Great House of the Tribal Hole, or Fortress, or Tribal Capital, and the other names of the districts inland from Balkash.

AN APPARENTLY DEFINITE IDENTIFICATION OF MASONS WITH THE EGYPTIAN M-S-N

(Reprinted from the Proceedings of the Merseyside Association for Masonic Research.)

INTRODUCTION

IN the semitic languages the consonants are the important letters, and those of the old semitic languages are, it is believed, quite accurately known. But it is only of recent years, thanks mainly to a study of Coptic, that the value of the vowels has been determined. Therefore, if in reading a book twenty years old, on Egypt, one comes to the name Ari, and finds, in a book two years old, the same name, i.e., the same hieroglyphs, transliterated It, one will understand that in the elapsed eighteen years it has been found that the latter is the more probable rendering.

In the present note, to avoid any possibility of personal bias, I have followed throughout Gardiner's Egyptian Grammar, which is admittedly the latest and most authoritative treatise on the Egyptian language, and have identified the hieroglyphs treated of by the numbers given to them by him in that book and their translation by the page on which he gives it.

DATA

It has often been suggested that the Egyptian M-s-n, the followers of Heru-Behuti, were the original society from which our Masonic order is descended. But, up to the present time, there has been no definite proof of this.

The word M-s-n is translated by Budge (Gods of the Egyptians, vol. I, p. 485), as "blacksmiths," and Gardiner, p. 544, translates it as "hippopotamus hunters," and on p. 510 as "weavers."

There is, so far, nothing to connect the M-s-n with Masons, except the similarity of name, and this means nothing by itself, since the Egyptian root m-s also means "to bring," so that the King's messengers might also claim them as their prototypes, so far as the evidence can be taken to indicate anything.

But in the Book of the Dead (papyrus Nebseni) occurs the name of an Egyptian God, written with the hieroglyphs, in Gardiner's numbered list, -

Hieroglyph	Read	Translation	Gardiner, page
D 4, An eye	Ìr	He who makes	443
G 17, An owl,	em	according to	542
F 34, A heart,	ab	desire	534
I 9, A viper,	f	his.	542

or Ìr-em-ab-f, "He who makes according to his desire": an artificer god.

From the Book of the Dead we learn three things more about him.

From Chapter 125 we learn that he was one, the 36th, of the 42 Assessors or judges who received the so-called "Negative Confession." He was apparently a god, and possibly a great deified man, as for example the deified I-emhotep (Budge, Gods of the Egyptians, Vol. I, p. 522), the celebrated architect and healer.

From Chapter 125 we learn that he "comes forth from the city of Tebti," and From Chapter 110 we learn that he has blue eyes.

As is well known, the Egyptian gods had many names. See for example the list of names of Osiris given in the Book of the Dead, Chapter 142. One of the names of Osiris there

given, in section 5, is An-mut-f-ab-ur, a name of the same type as the one we are now considering.

Can we find another of the names of this god or deified being? What artificer god, with blue eyes, has his temple in the city of Tebti?

Tebti, the Tanis of Herodotus, the Zoan of the Hebrews, was a great manufacturing place of glass, pottery, etc., and had a great dockyard. In Numbers xiii. 22, it is stated to be older than the time of Abraham (Smith, Dict. Class. Geog., art. Tanis). An artificer god would therefore be natural.

Turning up Budge's invaluable index to his Gods of the Egyptians, we find that the only god he gives, as having a temple there, is Horus Behutet.

In Smith's Dict. Class. Geog., it is stated that the temple there was that of Ptah. Ptah also was an artificer god, and may have been confused with Heru, or, as it is usually spelled, Horus Behutet. Or his worship may have superseded that of Horus. In any case, at the time the chapters of the Book of the Dead were written, it was Horus the artificer who had the temple at Tanis, and the Book of the Dead states that Ptah was the god at Memphis.

When we find that Horus is the only god mentioned in the Book of the Dead as having blue eyes, "Horus of the blue eyes cometh unto you," chapter 177, line 7, the identification is apparently complete, especially when we note that the name of Horus does not appear along with that of Ìremabf in the list of the 42 judges of the dead, in chapter 125, and this would support the conclusion that Ìremabf was another name for Horus, just as An-mut-fab-ur is another name for Osiris, chapter 142.

Having thus identified Ìremabf with Horus Behutet, it is a matter of very considerable interest to note that Hem-Behutet, or Ìremabf, was the head of the Mesen.

I need not give a description of these, as it will be found given very fully in Budge, Gods of Egypt, vol. I., pp. 476, seq., and this paper is sufficiently long. As regards the meaning of the word M-s-n, or to supply the missing vowels in accordance with accepted practice Mesen. after very thorough investigation of the Egyptian, Phoenician and other Semitic language roots, and of the places where the words are used, it is evident that the word does not apply to any particular kind of work, but to the position of the men occupied in it.

The root M-s means "to produce, or to bring forth" (Gardiner, p. 544, and others). The word "Factors" would be a good translation, had the factors of the old companies been actually workmen or overseers themselves. Possibly they were. In any case, Mesen means a master craftsman, irrespective of the nature of his work. At Edfu they were undoubtedly blacksmiths, but at other cities they may have been masons, or other craftsmen. In hieroglyphic writing the hieroglyph originally represented the thing itself. It is therefore of interest to note that Ir, "He who does," is written with a hieroglyph which

is the Masonic Eye (Gardiner D 4) . Also the word M-s, in M-s-n, is an apron constructed out of three foxes' skins (Gardiner, F, 31). These may be merely coincidences, but there is more likely a connection which is real. It would seem as if in the name Ìremabf we had good evidence of a real connection of our order with the Old Egyptian order of the master craftsmen of the Egyptian order of Mesen.

ADDENDUM

It would be natural to reject the connection with the King of Tyre, as being a story made up to explain certain things. I felt so till it developed that the Mesen were originally, in pre-dynastic times, foreign invaders from the Red Sea (Budge, Gods of Egypt, vol. I., p. 485) who crossed the desert to the Nile near Thebes.

Nine years ago I shewed (Deluged. Civilization; now out of print, but in the British Museum, Atheneum and other libraries) that the Phoenicians came this way. As there was a city of Tyre at their original home at the Stagnurn Assyrium, Ìremabf may have been a king of that original Tyre, but there is no proof of this.

The name Hiram-abi, or as it is usually spelled, Hiram-abi, of 2nd Chronicles ii. 13, is a well known type of Phoenician name. Compare Abi-Baal, and name of Hiram's father; Abi is (Rosenberg, Phoenician Dict. p. 70 and the Century Bible, Chronicles, p. 184), "Hurom is my father," i.e. my benefactor or protector. But the word "abi" may have been used as a mnemonic for the widowed mother of Horus Behutet, for such mnemonics are found in many ancient rituals.

SYNOPSIS OF SOME UNPUBLISHED CHAPTERS OF THE DELUGED CIVILIZATION OF THE CAUCASUS ISTHMUS

(Use Stieler's Haged Atlas or British Staff Maps)

BABYLON. The names of the gods of the Babylonian Creation legend, i.e. Lakamu, Lakmu, Kingu, Anshar, An, Marduk, Gaga, are the names of the most prominent mountains of the Caucasus range. The names are all unchanged except Kingu, now Elbruz, and Anshar, now Kasbek; whose old names are given in the Encyclopedia Britannica, article "Caucasus".

Almost all of these names are very distinctive and are found nowhere else, e.g. Lakamu, Gaga, etc., though Kingu is found as Kongur on the shore of Lake Sevanga. In addition their characteristics correspond with those of the gods. For example, Kingu is the greatest, Anshar next, then An; and Marduk is near Anshar; and Gaga is a smaller mountain between Marduk and Terek. The Apsu was the crest of the range.

The Creation epic gods were therefore the original Titan gods.

BABYLONIA AND FINLAND. The Encyclopedia Britannica, article "Babylonia", says:

"The country was divided into two halves, the Sumir (Sungir or Shinar) in the north west and the Accad in the south east, corresponding most remarkably to the Suomi and Akkara-k into which the Finnish race believed itself to have been separated in its first mountain home. Like Suomi, Sumir signified "The People of the Rivers" and, just as Finnic tradition makes Kemi a district of the Suomi, so Came was another name of the Babylonian Sumir. The Accadai or Accad were the "Highlanders", who had descended from the mountainous region of Elam and it was to them that the Assyrians ascribed the origin of Chaldean civilization."

The Apshuron peninsula was the home land of both races. It is a net work of rivers, locally called "-su". See Ach-su; Ach-Koissan-su; Sumgait; Sangat; Samur, etc. The people north of the mountains, on the peninsula, were called Su or Suoni in ancient times, see Strabo and Muller's Ptolemy. The people south of the mountains were called Shemi, Shumi or Shomi, (see maps). Suoni means "People of the River Lands". The people on the heights were called Achd and the name still persists; see town of Achty. It was also where the Al or Alon race was. There is a mountain called Gil-gum-kock in the Suoni district, near a town called Dilum. The town of Sabuje is on the south side of the mountains, to the west. Ur-al-a was the name of the city of the Terek to the west, the old Erech. Wide-plaza-ed Erech was wide-plaza-ed Tartarus, with 'its great circular spaces and race-tracks. The old observatory at Shemash and Marash is just south of the mountains, and there was another Marash just north, see below. Lam is found as an additive term meaning "mountain" only in this peninsula. Compare Sukur-Lam. The eagle and the snake were the emblems of the Aet-Ur who lived south of the mountains to the west, and of the Seres who lived north and to the west. The Chalybs were the Chaldeans (see Strabo and Xenophon who state specifically that this was their original name). The plain of Shinar and town of Chaldan are on the south side of the peninsula.

EGYPTIAN. There are only two lands where the sun rises over a mountain called Bakau (the mountain of sunrise) out of the sea, and' sets over a mountain Ta Manu (peninsula and mountain of Tamen) into a sea called Maaitis (Sea of Maaitis or Maetis), and these are the Caucasus Isthmus and the land of the Egyptian Book of the Dead. The route of the Book of the Dead was along the Mediterranean coast (the Great Green Sea); then along the west shore of the Black Sea (the original Lake Maaitis or Black Sea) to the Siwash, past Ak Metschet, Tatisch and Tschetyr Lak; then past Arabat, through the strait of Kertsch in the land of Res-tau or Tau-rus to Anapa. Then up the river Kuban to Ser-Ser or Tar-tar; through Erebus to Tioneti (Ta Neter) and Achmeti and Shemochada Sheni (the Sun City of the Shenit or Overseers) ; Thence to Harmakis and Baku and the Fields of the Sun, Sakataly, and to Baku and the Flaming Fields. The Pillars of Shu were the Two Brothers.

This route is the same as that of Homer. Why the Egyptians should have supposed that they went back to the home land when dead is not known. Bait there are many analogies; for example Curtis ("Children of the Sun") says that the Zuni expected to go back to the land their fathers came from when they died.

Seback near Baku of the Egyptians was Bacchus, who was said to be born near there at Nucha. Sabazios, the chief Thracian divinity, was another form of Sebak; and possibly the Sabathai who, though mostly Jews, were not of the Jewish religion.

CHINA AND INDIA. Siwash is Siv-ash, and Seb is Siv. Sevanga is the feminine goddess. The Hindi were originally the Sindi, at the mouth of the Kuban. The Seres later became the Chinese. Another branch were the Khani or Kaini. The Telchines were the Talachani; and the Surachani were the tribe from whom the "Siricon" of the ancients took its name. See Talachany and Surachany on opposite sides of the isthmus of Baku.

PILLARS OF HERCULES. The eastern or Jakin pillars of Hercules are shown on the maps on the old shore line of the Caspian, where the Udon used to fall into it. See Stieler's Atlas, sheet 49, 0,19: the village Kurkeuli Juk Jewe. On the Times Atlas it is Stavka Terekli, (Stake of Hercules). The pillars of Alexander are forty miles to the east, on the Caspian shore.

VOCABULARY. A list of about forty primitive word roots has been prepared. Almost all of these are found to be common to all languages.

January 1, 1924.

Note 1 - The maps which are linked to this document are actually earlier (1929) versions of the maps than those which were published in the 1933 volume of Chapters 7-10 of the Deluged Civilization of the Caucasus Isthmus. The 1933 versions were smaller and spread across two pages making copying difficult. The 1929 editions which appear here were published as separate large sheets. There are no substantive differences between the content of the versions of the maps, the 1933 maps simply having been 'cleaned up' for publication somewhat. The 1929 version of Map 8 was additionally hand-colored whereas the 1933 version had the color printed on them.

Note 2 - The map labeled "CSM" linked ahead of the title of this document was not published in the 1933 volume of The Deluged Civilization of the Caucasus Isthmus but instead was published in the Christian Science Monitor of March 8, 1926 as an illustration for the article that now comprises Chapter 9, **HOW IT WAS DISCOVERED THAT THE SO-CALLED MYTH LANDS WERE THE CAUCASUS ISTHMUS**. It was copied from the original article which had been attached, in an envelope, to the 1923 volume located at the Smith College Library.

Note 3 - The Deluged Civilization of the Caucasus Isthmus was published in three parts as separate volumes, with the latter two volume out of sequence:

PART 3

INTRODUCTION

This is chapter eleven of "The Deluged Civilization of the Caucasus Isthmus"; the first six chapters were published in 1928. Chapter seven, on the location of the pillars and underground record chambers of the Cabeiri, chapter eight on the home-land of Abraham, and chapter nine, on the land of the Gilgamesh and Creation legends of Mesopotamia have not been published. Chapter nine appeared in the Christian Science Monitor, March 18th, 1924 and chapter ten in that paper, March 8th, 1926, each accompanied by a map, here reproduced as maps 3 and 4.

The location of the pre-deluge subterranean record chambers is not a difficult task. Their approximate locality is known. The Sippara of the Deluge legend was not a city but a land, that of the Saspirati or Hisperati (Hesperides), and this is now certainly known, and the location of the City of the Sun in that land, where the chambers were. The author's acoustic sounder which has come into use for locating underground strata and sea depths (U. S. patents 1,217,585, August 2d, 1914; 1,240,328, August 2d 1914.) has been found to give accurate location of superimposed strata and hollows to depths of one mile underground, and indications of their nature. The rights to use the invention for archeological purposes have been reserved by the author, to prevent unscientific search and the looting of sites for treasure and objects of art. Any archeologist of repute may obtain the right to use the devices of the patents without payment or condition other than that the excavation shall be carried out in a scientific manner, such for example, as is the practice of Sir Flinders Petrie.

Authorities given are those selected as most generally accessible; references have been verified by comparison of the best existing texts of the original.

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CHAPTER 11

THE EGYPTIAN AND ARYAN HOME-LANDS

EVIDENCE that the Caucasus Isthmus was the home-land of the Egyptians and Aryans, and that the Tamen Peninsula was the last part occupied before the migration, was presented in the writer's *Deluged Civilization of the Caucasus Isthmus*, published in 1923; an additional chapter giving some score of the more important place names and a map appeared in the *Christian Science Monitor*, March 18, 1924; and a chapter dealing more especially with the Greek home-land, but giving some additional place names of the Egyptian and Mesopotamian homelands, appeared in that journal, March 8, 1926.

These are all out of print, though copies may be seen at the British Museum, Bodleian, and elsewhere, and quite a number of requests have been received for a brief summary of the evidence. This is given here under the headings, Place Names, Characteristics, Historical, Archeological.

Place Names. First the Egyptian or Aryan place name is given. Then the reference in the *Book of the Dead* (Budge's translation) or the *Vedas*. Then the Caucasian place name which it is believed to represent. Then the location on the map on which the name occurs, or the author (Strabo, Ptolemy, Pliny) who gives it. The map most referred to is the 5-verst map of the Caucasus published by the Ordnance Survey Office, Southampton, as this is based on the Russian map of 1857, made before the Caucasus was occupied by Russia and while the old place names were substantially unchanged. (This last statement will be, it is believed conclusively, supported later; see Strabo, Rostovtzeff, and others for evidence that there was no effective penetration of the main Caucasus prior to the Russian occupation.) Other maps referred to are the International (1: 1,000,000), Stieler's Handatlas, Oswald's geological map, and the Admiralty charts. It will be understood that on account of space limitations only the most important and distinctive names are given, and only a part of these, for the number of place names identified is more than 100.

Where terminations such as -skaya, -pol, -us, -ana, etc., have been added by the geographers to the original place name, the name is given exactly as found on the map, but the termination is separated from the main place name by a hyphen. Note that "Gate," like the Greek "pulai," means a strait as well as a pass; that "Nesos" is never used by the early Greek writers to mean «island, but ait or «land» (compare "Peloponnesos," "Nesos of Arabia," "Nesos of Mesopotamia"); that "Ta" means (roughly) "the land of"; "Ach" means "people"; "Su" and "Oche" mean "river"; "An" means the "pole" before the abode of the chief or the temple, and "lady" or "goddess"; "M" means "lord" or "domain" (compare Shakespeare's "France" for the king of France); "Aea" or "Aet" means "darkness" or "earth" or "extent"; "Kal" means a hollow, cave or walled place; "Pir" means "hearth" or "house"; "Sar" or "Shar" means "the upper end of the valley," or "lord"; the digamma, Egyptian f, and b, p, ph, mean "of." Also that a river was considered as coming from the clouds or snow of a mountain, and hence took the name of the mountain, and that there might therefore be several rivers of the same name proceeding from one watershed, e. g. the two Aragvas (Greek Erebus), flowing from the watershed of

the Darial Pass in opposite directions, two Alazans. Also that almost all the vowels were interchangeable (Kuron, Chron, Charon; Parthenon, Pir Athenon), with certain welldefined limitations, the consonants being the important part of the name. Initial a is very frequently elided (Talanta, Atlanta, etc.). That the gods were originally sexless, and frequently varied their gender, e. g. Nephthys (An Aphetys), Neptune, Japhetos; and even their number, the twin God of justice of Tiglath Pileser becomes the Rhadamanthus (judge of the Asiatics), of the Greeks. To proceed with the place name identifications:

1. *Bakhau and Ta Manu*. - "The most easterly and most westerly points of the sun's course, and the places where he rose and set." *B. of D.*, p. 4, note.

Baku and Tamen peninsulas. - Eastern and western extremities of Caucasus range, projecting into the Caspian and Azof seas. - Any atlas. Mt. Bikni of Sayce, *Prim. Ass.*, p. 57.

NOTE. The Caucasus range is inclined almost exactly 23½ degrees to the equator, so on the longest and shortest days of the year this is almost astronomically correct.

2. *Pool of Maati*. - Into which the setting sun sinks at night; *B. of D.*, chap. 17 and p. 4.

Lake Maeotis. - Into which the sun (apparently) sinks at night. - *Classical Atlas*. Sea of Azov, west of Tamen peninsula.

3. *Ket Seker*. - The Funeral mountain or land; the land (house) of Seker, the coffined Osiris; *B. of D.*, chap. 137, 151a, and hours 4 and 5 of the Am Tuat.

Ket Sekur range. - Probably the home-land burying place, in caves or chambers in the hills. Also probably containing oil sands. International and Ordnance maps. Tamen.

4. *Gate of Neb-er-djer*. - The secret doors in the land of Seker. *B. of D.*, chap. 86 and hour 4 of the Am Tuat.

Pass of Neb-er-djai. - Pass entrance to Ket Sekur range. Ord. map. B3. Note arrows of hieroglyph of name *Neber-djer*, and Circetae land, *Classical Atlas*, and Lake Kirke in Tamen peninsula. Oswald and other maps.

5. *Akert (Akur-aet). Akeru gods*. - The domain of the twin Lion gods, one of whom is at Baku and the other at Tamen. The domain of which Osiris is lord. *B. of D.*, chap. 18, 64, and note 2, chap. 64.

Akurt. Theoi Akraioi. - The whole crest of the Caucasus, from Apscheron (Malte Brun, *Okoressa*, p. 51), through the middle of the range (Ptolemy, *Agoritae*), to the Tamen peninsula (Puny; *Acrae*, 4, 27; *Exretice*, 6, 4; *Epageritae*, 6, 5; and others. Pliny says the *Epagerite*, i. e. *F-Akuritae*, were of Sarmatian descent and dwelt on the range of the Caucasus). The crest was called *Ur* (the ship of Horus) and the inhabitants *Ach-ur*. The

Acheru, or Akraioi, were the mountain gods (Smith, *Class. Dict.*). As most of the mysteries of Greece were imported from Egypt, similarity in religious names is not surprising, and indeed 40 random sample pages in Liddell and Scott's dictionary shew 55 per cent of "Semitic" roots. But perhaps it may startle egyptologists to know, as I have been able to shew quite conclusively, that the much-discussed Egyptian term, "maa kheru," is identical with the Greek "makeros," i. e., "blessed" or, literally, "of the domain of the Great House," or possibly, "of the Sun People."

These words, *maa kheru* are commonly rendered 'triumphant,' but their true meaning seems to be, 'he whose word is right and true' - and as a result, whatsoever is ordered by the person who is declared in the Judgment Hall to be *maa kheru* is straightway performed. Thus before the person who possessed the 'right word' the doors of the underworld were opened and the beings who had power therein became his servants." Budge, *B. of D.*, p. lxvi.

"*Makaros* art thou, Simon Bar-jona - and I will give unto thee the keys of the kingdom of Heaven: and whatever thou shalt bind on earth shall be bound in Heaven." Matthew, 17: 17-19.

The expression was I believe used by Christ in its strict technical sense. "Galilee . . . was inhabited generally . . . by Egyptians," Strabo, 16; 2; 34. He had lived in Egypt, and in Galilee, Matthew, 2: 14, 15, 22. The Babylonian Talmud states that Christ performed the "burning of Maat," which Plutarch, *Isis and Osiris*, vii, states was ritual peculiar to the priesthood. That he was acquainted with the Book of the Dead is evidenced by the fact that the Gospels contain more than twice as many quotations from it as they do from the Old Testament. Simon Peter also lived in Galilee, Matthew, 4: 18. That He who was to be the Light to lighten the Gentiles (and now, in our time, to be the Glory of Israel) should have quoted from Gentile scriptures is only what might have been expected.

6. *Kemur*. - The sacred city ("Kem ur" means sacred city) at the entrance to Akur, where the great fish (maat) Remu was. *B. of D.*, chap. 64, 89, *Prayer of Pepi II*, chap. 123.

Kimmur. - The city of the Cimmerians ("quod ante, Cerberium vocantur," Pliny, 6, 17, and Liddell and Scott, who are mistaken however in saying that it is a different form of Cimmerium) at the entrance to the Tamen peninsula. - Strabo, 11, 2, 4, and Smith, *Class. Dict.* See Cerber-Jakin at Mantsch entrance to Caspian.

7. *Khemmenu*. - The place where the setting sun enters into the pool of Maatis. *B. of D.*, chap. 64.

Kamenni. - The most westerly projection of the Tamen peninsula into Lake Maeotis, and the western Pillars of Hercules, the Phoenician god of Fire and Wind (KurKal). See Phoenician dictionary, "Kaminim"; *Sanchuniathon*, quoted by Eusebius, p. 34c; Herodotus, 2, 44; Strabo, 3, 5, 5. For evidence that the Pillars were in the East and not far from the river Tanais (Don), see Strabo, 15, 1, 6; Diodorus Siculus, 2, 1; Steles of

Shamshi Adad and Ninus, Olmstead's *Assyria*, p. 156, et al. The "sea of the Setting Sun" has been mistranslated as "Urmia," but it was really "Sebanki," i. e., Maeotis, as we know from the Chinese trade annals. (See Hirth and Rockhill's *Chinese and Arab Trade*.) One of the earliest Christian sees was that of the Pillars of Hercules (Psidach Herculi) in the north Caucasus isthmus. The archetype Pillars were the two sections of the Caucasus range, east and west of the Aragva pass (Dariel).

8. *Gates of Seb.* - The strait (*B. of D.*, chap. 38a), which was the entrance to the land of Akur. "The gates of Akur are the gates of Seb." *Pepi I*, text.

Straits of Seb-anki. - Hamilton and Falconer, in their notes to Strabo 7, 3, 18, spell this "the strait of Zabache or Ieni-Kale," and the "Sea of Maeotis or Zabache," but the Chinese and Arab trade records (Hirth and Rockhill, p. 153) spell it "Sevanga"; the "colony" lakes in Armenia, Bithynia, and Syria are spelled "Sevanga," "Sabinga," and "Sabaka." Sabakos is a synonym for Strabo's "Sapra," 7, 4, 1 (see Liddell and Scott), and the Arabic geographers used the term "Sabache" or "Sabcha" for a shallow marshy lake (see Sprenger, *AGArab*, 133 and *PRR*, 66, quoted by Knox), such as Maeotis. The *Book of the Dead*, chap. 146, papyruses of Ani and Nu, spell the name of the door-keeper of the third pylon as "Sebanqa" and as "Sebaq" (ertat). In the papyrus of Ani (Budge, plate 17) "Saba" is the word used for "gate" and "Sebek" the word used for "door." Khemennu, at the entrance to the straits, was the "citadel of Sebak"- (Rameses' address to Ptah, quoted by St. Clair, *Creation Records*, p. 301). Note that "Kroni" was the older name for the Pillars of Hercules (Frazer, note to Apollodorus, 2, 5, 10); and that Mt. Kroni is on the opposite side of the entrance to the strait, across from Khemennu; and that Cronus is Seb, and has same hieroglyph for name (St. Clair, *Creation Records*, p. 208). The name of the straits seems to have been, first, "Seb-akku," then "Seb-angi," then "Sebka," and lastly, at a much later date, appears to have been changed to "Zab-ache," possibly in a mistaken attempt to Atticize the "Sa," misunderstood as equivalent to "dia" (see Liddell and Scott, *z* and *za*), i. e., at the other end from Bakau, analogous to Zabaikal. For Sebek in L. Maati see Budge, *Egyptian Heaven and Hell*, p. 61.

9. *Holy lake of Sek-hra.* - *B. of D.*, chap. 136B. In *Kem-ur*, chap. 88. See also chap. 113. *Lake Tsokur.* - In *Cimmeria*, Ordnance and International maps, Tamen peninsula.

10. *Petra, Gates and Gate keeper.* - Admits to the first temple, *B. of D.*, chap. 68.

Straits of Patares. - Black Sea end of Straits of Yenikale or Kertch, Ammianus Marcellinus, 22, 8, 30. City at Black Sea entrance to straits, *Patraeus*, Strabo, 11, 2, 8. Patur appears to have been first the stone used for crushing, and possibly onomatopoeic, and then the "opener" or "splitter" (Pateidaon). Then the official opener, or priest (patesi), and the navigational openers or eggshaped, string suspended loadstones (with little arms and feet attached), which hung in the poops of the Phoenician vessels. The catechisms in the *Book of the Dead* begin with the words "Putra efer su," which may not be accidental. See also Matthew, 16: 18.

11. *Bata or Beta*. - The city of the divine door, the wearer of the double red crown. *B. of D.*, chap. 41, 4 and *Book of Gates*, Budge, *Egyptian Heaven and Hell*, Vol. ii, p. 248. Bata was the city of the bee. Also see Breasted's *Egypt*, p. 32.

City and Harbour of Bata. - Strabo, 11, 2, 14. City and harbour, now, of Novorossisk. Identified positively by distance given by Strabo from entrance to Lake Tsokur. It is the Black Sea harbour of Tamen, and gives access to the Gates of Neb-er-tcher and the Het Sekur range. Note the river Tsemmes, from which the Scythian iron was shipped.

12. *The Serakh*. - The peaked-roofed chamber in which the bodies of the dead were prepared before being buried. (The name originally meant a house for drying fish.)

Mt. Seracha, Ordnance B3 and Oswald. On opposite side of river Tsemmes from Gates of Neb-er-tcher, on way to Ket Sekur, or Burial mountains.

13. *Naarutf and An-aaretf*. - The land and the city where nothing grows, *B. of D.*, chap. 17 and 125. North of Restau, at the head of the pool of Maati.

Nauaris and land of Anaricae. - Nauaris is on the Don, east of Rostow, Ptolemy map and International map. The Anaricae were the wandering nomads who inhabited the north Caucasus isthmus, Strabo, 11, 7, 1. The whole northern coast of Lake Maeotis was a "desert," Strabo, 7, 4, 5; is "quite bare of trees," and "all Scythia is utterly barren of firewood," Herodotus, 4, 19 and 4, 61; "where for hundreds of miles the eye sees in summer only a parched waste of steppe grass and in winter an ocean of snow," Kennan, *Nat. Geog. Mag.*, October, 1913. The district of *Taganarog*, northeast shore of Sea of Azov, is possibly Ta Ach Anaroche. Homer's land of Oneiros, Strabo, 11, 7, 1.14.

14. Restau. - The following is from the catechism of chap. 17, *B. of D.* Ani says that after the "Great Green Lake," which we know from other records is the Mediterranean, and Lake "Heh" or "Hehi," in which Ra dwells and into which he enters at Khemmenu, chap. 64 (also called Sam- ket and Maaat), -

"I pass over the way, I know the head of the Pool of Maauti."

"What then is this?"

"It is Restau, that is to say, it is the underworld on the south of Na-arut-f, and it is the northern door of the tomb."

Rostow. Taurus. - At the head of the lake of Maeotis (Azov) and on the southern border of the desert steppes, is the city of Rostow (International and other maps). It is a northern gate to the Caucasus, in fact it was a main trade route from the Black Sea, i. e., via Lake Maeotis, Rostow, the Manytsch lake system, and up the Yegorlik to the Dariel Pass, i. e., pass of Aragva. Or, continuing on through the Manytsch lakes, and passing through the delta channels of Shar-Shuppi and Shar-Saradon (*B. of D.*, chap. 163, and International

map, L38), one reached the Caspian and the valley of the southern Nile (Sorus), south of the Caucasus. This was a regular route of invasion, by the Scythians from south Caucasus valley to Cimmeria and again from there to Media, and there are other points of identification. For a description of the crown of Osiris found there, at Rostow, and illustration of same, see Zakharov, *Ancient Egypt*, September, 1926.

Rostow was, however, used in a wider sense, as the north Caucasus district and as the range itself. In the first place Ros-tau is a literal translation of E-kur or Akur, the great mountain or great house. Also Scythia was inhabited at a very early date by the Ros or Rosh tribes (Tzetzes), from whom the Thracians (Thras) and Etruscans (Ras) and Russians were possibly derived. There is a well-known idiom of the Caucasus according to which the mountain range of the Lesgi is called, e. g., "Lesgitau," and the part of the tribe living in the mountains is called "Tau-Lesgi." See Abercromby *Trip through the Eastern Caucasus*, p. 28. The range of mountains possessed by the Ros people would therefore be called "Rostau," or "Akur," and the people dwelling in it would be called "Tau-ros," from which the word Taurus (which has, of course, nothing to do with a bull except incidentally) is most probably derived. Rostow, in this wide sense, would therefore be Akur, or the entire range of the Caucasus and its environs. For paths of Restau, B. of D., chap. 117. Caspian was "Shat-Alont-ach," see old Russian maps, also Pliny, 6, 15.

15. *Aetia* (old name of Egypt). - "Egypt is said to have been called originally 'Aetia' and the Nile 'Aetos' and 'Siris,'" Rawlinson, notes to Herodotus, 2, 15. See also Apollonius Rhodius, 4, 268, and Homer, *Odyssey*, 4, 1-4.

Aetia. - The western half of the Caucasus, the kingdom of Aeetes, stretching from Dariel Pass to Tamen. Smith, *Class. Geog.*, and Diod. Sic., bk. 1, chap. 4.

16. *Siris, Oceanus, Aetos*. - Old names for Nile, Rawlinson, Herod., 2, 15; Diod. Sic., bk. 1, chap. 2; Pliny, 5, 9; Dionysius, *De Situ*, 5, 23.

Siris, Aushet, Aeti-ope. - The Cyrus of the Greek geographers, modern Kur, originally Sor (Strabo, 9, 3, 2). Also its sister river (see supra), the present Kuban, whose main channel in the Tamen peninsula was formerly the Aushet (Ordnance map, B3.), i. e., Aust (Isis), and Oceanus (Diod. Sic., bk. 1, chap. 2). For Isis as Nile, as well as Osiris (Sar), see Diod. Sic., bk. 1, chap. 2, and old name of Nile, "Astopus" (Auset-ope, Isis River), Diod. Sic., bk. 1, chap. 3. For Aeti-ope see Diod. Sic., bk. 1, chap. 2, and Del. *Civiliz. of Caucasus*, p. 52. For a land *Mitzra* in S. Caucasus (Valley of Cyrus), see Isaiah, 41: 2, seq. 17.

17. *Nephthys, Isis, Osiris* (Neptha, Aust, Sar). - Osiris and the two goddesses who are on each side of him, with large black plumes.

Nephthy-anaya, Otcherety-anaya, and oil wells between them. - For identification of Osiris with symbol oil, see B. of D., chap. 125. Egyptologists may note city "Bak-an" near pass of Neb-er-tchai and Mt. Seraki; "bak" is "olive tree," and this district was

famous for its olive yards, Smith, *Class. Dict.*, art. Phanagoria, - so the initiate would "pass on by the city to the north of the olive tree" (*B. of D.*, chap. 125). Nephthy-an-aya and Otcheretyanaya are two extremely remarkable hills, lying east and west of a close group of naphtha wells, in the northwest end of the Tamen peninsula, and the arrangement is so striking that it can hardly be otherwise than connected with the symbolism of Osiris and his two goddesses. A look at the map, Ordnance, A2, will be very convincing. I have shewn that the black plumes were smoke (1924 article). The form used for Isis, i. e., Otcherety, may be Ausare-ty, i. e., consort (*tu* or *ty*) of Ausar (Egyptian spelling of Osiris). Compare An, Antu, etc.

18. Horizon, Pillars of Shu, Gate of Ra. - The Horizon was the path of the sun, with its 12 Arits, over which he went each day (*B. of D.*, chap. 144), with the sound of roaring thunder clouds (chap. 39). The Pillars of Shu were the Two Horizons, or the east and west sections of the Caucasus, the horizon or mountain (*Hymn to Ra*, p. 16) of Baku and that of Tamen (*Hymn to Ra*, p. 4 and Budge's note). The Kur-Gal of the Babylonians. The Horizon was the whole range, and the constellations, I have discovered, were named after the different tribes or nations of the Caucasus, i. e., the Ram, the Bull, etc. The Gate of Ra was the great defile, with cliffs 5,000 feet high, which divides the Caucasus range into east and west sections, formerly called the Aragva (Erebus of Greeks, Erib of Babylonians), Telfer, *Crimea and Trans-Cauc.*, Vol. I, p. 266, and Strabo, 11, 3, 5. See also plan of Egyptian temples.

1. *Gate of Tchesert. Set Tchesert.* - The gate of the Pillars of Shu, *B. of D.*, chap. 17, and the Holy Mountain, *B. of D.*, chap. 1B.

Valley of Tschert-the col of the Dariel pass. Mt. Tschert, down the valley. Ordnance map. F6. The Caucasus was the great boat, or Baris, of the *Book of the Dead*, chap. 99, etc.

19. *Anpu, Aneph, Anubis.* - The embalmer of the dead; he who is in the house of embalment; the opener; the doorkeeper of the Tuat; who dwelleth in the city of embalment *B. of D.*, p. cxxii; chap. 45; chap. 168, 7; funeral text of Ankh-f-en-hetemti, p. 692.

Anapa, Anaphe. -The city at the foot of Mt. Seraki, near the Bay of Bata, and the Het Seker range. Ordnance map, A3. Originally much closer to Seraki than now, on account of shoaling up of harbour. He would be the doorkeeper of the Nebertcha -late, between Serachi and the Ket Sekur range, and of the city of Beta.

20. *Astira, Thoth.* - Asti-Ra, representative or vicar of Ra. Lord of Khemennu and of the Balance. *B. of D.*, chap. 30B, and *Annals of Nubian Kings*, Budge, p. 35. *Asturi-achani.* - N. W. Tamen peninsula, including Khe mennu. Ptolemy map.

21. *Thinis mouth of Nile, Pans and Satyrs, Chemmis.* - The coffin of Osiris floated down the Thinitic branch of the Nile. The Pans and Satyrs round Chemmis were

the first to find it. Petrie, *Personal Religion in Ancient Egypt*, p. 127. Mt. Ada is nearby.

Ach-Taniz-ovski mouth of Kuban, Panaghia, Satyrus. - One branch of the Kuban flows into Lake Ach-Taniz. Ordnance map. Panaghia and Panik are names of nearby cape and mountain, Ordnance map and Admiralty chart of Kertsch strait. Mt. Satyrus is next Panachi cape, Strabo, 11, 2, 7, and Satyrus was a common name for the kings of the Tauric Bosporus, *ibid.*, and Smith, *Class. Dict.*, Panaghia is the Panachea of Euhemerus.

The Kuban was formerly called Vardanus (Ptolemy), i. e., F-Aridanus, or Eridanus, which possibly accounts for the Phaethon form of the Osiris myth. Poplars and cedars grow on its banks, so amber should be found at its mouth.

22. *Harmachis.* - Lord of the Horizon, or Ra. *B. of D., Hymn to Setting Sun*, p. 84, and *Hymn to Ra*, p. 16. I. e., Lord of the Caucasus range. The double hermax, or pillars or mounds. L. and S.

Harmaktica. - Ptolemy map; Strabo, 11, 3, 5; "just opposite" to the pass of Aragva, or Gate of Ra. Pliny, *Nat. Hist.*, bk. 6, chap. 11. Hereditary titles of the kings of Georgia were (a) David, i. e., "Ta-F-Aet," i. e., Aeetes, Marco Polo, 1, 4; (b) Armazt (Pillars), Telfer, *Crimea and Trans-Caucasia*, Vol. I, p. 302. This was the Persian form of the title, *ibid.*, and may possibly be connected with Hermes; see Liddell and Scott, *Hermes*: (c) The native form was "Pharnawar" (Pir-An-Awur, i. e., House of the Pole, i. e., king of Awur or Amuru, see Clay, *Amurru*, or of the domain of Ur or Aburia). Pharn, i. e., Pir-An, was a common title of kings in this neighbourhood, see Smith, *Class. Dict.*, Pharnaces, Pharnabazis, Pharnaspes, Pharnuchus, etc., and suggests a connection with the Egyptian title, Pir-u, i. e., Pharaoh. It was approximately on site of present Mzcheti (Sun city).

23. *Sekhet. Sekhet-Aaru.* -The Egyptian "Elysian Fields," or "Dvipa Sukhadara" *B. of D.*, chap. 110. It was profusely irrigated by canals, and grew luxuriant crops. Sekhet-Aaru was a city, with iron walls, i. e., wooden beams clamped by iron (*B. of D.*, chap. 108), and was the first of fifteen sections of the Sekhet.

Sakatali. - A city in the Alizon (Elysian, *Deluged Civilization*, p. 55) valley, a few miles from Kemur. Ordnance map, G7, below Meru and near Nucha, where Bacchus was born (*Monitor article*, March 8, 1926). Sekhet means "Morning land" and "Coming-up land," and hence "Fields," by which it is generally translated. "Morning land" was an old name for Egypt, see Apollonius Rhodius, *Argonaut*, 4, 268. Aeria was another old name for Egypt, which Liddell and Scott give as equivalent to "Kemia." So Sekhet-Aaru might be "Morning Land of the dark earth," Kemia, i. e., dark soil, being still another name for Egypt. There are other place names containing "Sekhet" in the district, e. g., Sakatlis-serf, and the land is still extensively irrigated and very fertile, and it is reached directly from Aragva pass, the Gates of Ra (Strabo, 11, 3, 5 and 11, 4, 5). The Egyptians made no distinction between l and r, and both ali and aari mean "walled city," so there is some

justification for taking Sakatali as Sekhetaaru. In any case we may be quite sure that this was the district.

Sir Flinders Petrie in his discussion (*Ancient Egypt*, June, 1926) of my second paper, suggests instead, "Sekhet-Jora." Philologically this is quite possible, but the Jora valley is not a city and "the Cambysene" (valley of the Jora), "a country without water and rocky" (Strabo, 11, 4, 5). The Jora was the sacred river Champsis of the Scythians before they went to the north Caucasus isthmus, *via* Caspian and Nlanytsch, and the presence on its northern border, i. e., south Alizon district, of the Sakar range and the "warm saline lakes" of Patara and Didi, and the naphtha springs suggest rather the domain of Sekher, fifth division Tuat, *Egyptian Heaven and Hell*, Vol. iii. Champsis means "crocodile."

24. *Kherakha is Coraxa Mts.*, i.e., west Caucasus range. Strabo, 3, 2, 6 and Class. Atlas.

25. Fenku. - A people met with near Lake Maatis. *B. of D.*, chap. 125.

Panachi, Phanagoria. - Cape Panachi is at the entrance of the straits of Patares (Kertsch), and Sir Flinders Petrie has suggested, *Ancient Egypt*, June, 1926, that the city of Phanagoria, nearby, was the city of the Fenku. I am under obligation to Sir Flinders for having pointed this out.

Approximately 150 such identifications have been made, but the above will be sufficient for the present. The others will be published later, elsewhere.

Archeological Evidence. It appears that the reason why no archeological evidence was available at the time of the publication of the writer's papers is that it had been universally assumed that the Caucasus tribes were the remnants of other civilizations which had taken refuge there (Kennan, *Nat. Geog. Mag.*, Oct., 1913; Childe, *The Aryans*, pp. 176 seq.; *Enc. Brit.* art. Georgia; *et al.*) and so no evidence was looked for. But shortly after the evidence presented in these papers that the Caucasus tribes were the *originators* of the Egyptian, Mesopotamian, Greek, and Aryan civilizations, a very considerable amount of archeological support was forthcoming. Within a year of the appearance of the writer's second publication (*Monitor*, March 18, 1924), Sir Flinders Petrie chewed (*Ancient Egypt*, Dec., 1924) that the Badarian type of pottery which he had discovered in Egypt had probably travelled down from the Caucasus. The Osiris crown found at Rostow has been referred to above. In *Ancient Egypt* for June, 1927, so much further evidence is given, and by one so much better qualified than the writer to discuss this feature, that nothing more need be added here. See also discussion, *British Ass. Ad. Science*, 1926.

Historical Evidence, Customs, Natural Features. That there were Egyptians in the Tamen. peninsula at a very early date is shewn, aside from the evidence of the *Book of the Dead* and of the *Wars of Osiris* in the Annals of the Nubian Kings, by several of the early historians, e. g., by Diodorus Siculus, bk. 1, chap. 4. See also Strabo, 15, 1, 6, and

Herodotus, 2, 104, and 3, 12. It was a common subject of discussion by the early geographers. Herodotus says, of the Colchis or later Kalacha Aea section:

"There can be no doubt that the Colchians are Egyptians. Before I heard any mention of the fact from others I had remarked it myself. After the thought struck me, I made inquiries on the subject both in Colchis and in Egypt, and I found that the Colchians had a more distinct recollection of the Egyptians than the Egyptians had of them."

Herodotus then goes on to chew the similarity or identity of the physical characteristics of the peoples; the peculiar religious rite common to both; the fact that they both wove their linen in the same way, and "that a way entirely unknown to the rest of the world," and that "*in their whole mode of life and in their language they resemble one another.*" For other evidence, see *Deluged Civilization*, chap. 9.

That the people of the west Caucasus were Egyptian was agreed, and that they were settled there by an Egyptian king, Sesostria, was stated by the Egyptians; see Diodorus Siculus and Herodotus, *ibid*. The Egyptian priests, confusing him with a later Sesostris, held that he came from Egypt. He may have been a third-dynasty king, but, as Breasted points out (*Egypt*, p. 189), "In Greek times Sesostris had long since become a legendary figure which cannot be identified with any particular king." We find, however, a hint in Megasthenes quoted by Strabo, *supra*, who says "Sesostris conducted an army *from Iberia* to Thrace and Pontus"; and Diodorus Siculus, *supra*, states that this was by way of the Tanais or Don River, i. e., he passed north over the Maeotis. Now Sesostris (Seseuthes) is a Scythian type name, and Iberia is just in front of the Gates of Tschert (sebat Tschert, *B. of D.*, chap. 17) and a part of the Sekhet (see above, 18, 23). And we know that there were other invasions from this section to the Tamen peninsula, e. g., M the Scythians, who drove out the Cimmerians, Diod. Sic., bk. 2, chap. 3, and Herodotus, 4, 11. So the settlement of Tamen, and later of Colchis, may have been by an army of Egyptians from the old Aeria, or Alizon valley, led by a Scythian; similar to, as we now know, the settlements of the Hittites. But for our present purpose the detail is immaterial; we may be sure that no settlement was made in the Tamen peninsula, with its semi-arctic winters, by deserters from an African-Egyptian army; or that if such settlement was made, we may be sure that the settlers could never have driven out the mountain tribes of the west Caucasus and supplanted them. The settlers of Tamen must have come from the Alizon or Kur valley.

The *natural features* of the *Book of the Dead* are identical with those of the Caucasus isthmus. To mention a few of the more striking:

- a. The Stinking Worms. - Species *Julus*, 4 in. long, "very offensive." Ossendowski, *From President to Prison*, p. 83.
- b. Burning Lakes, Fields of Fire. - Reineggs, *Top. de Caucasus*, p. 59; Cunningham, *Eastern Caucasus*, p. 174; *Ency. Brit.*, art. *Caucasus*.
- a. Boiling Lakes. - Ordnance map, G7, et al.

- b. Olive Trees and Papyrus. - Tamen was celebrated for its olive yards, Smith, *Class. Dict.*, art. Phanagoria, Papyrus plumes were used for decorating the statues in the temples in Tamen, Arrian, *Mithrid.*, 12, 16, 111.
- c. Fertility of soil, and irrigation. - *Ency. Brit.*, art. Georgia. Strabo, 11, 4, 3; *Deluged Civilization*, chap. 10.
- f. *Persea Tree (peach)*. - Marks the midsummer sunrise (St. Clair, *Creation Records*, p. 55), i. e., the northeast. The persea was brought to Egypt by Cambyses, the Persian king, from Aethiopia. This could not have been the Aethiopia of the upper Nile, because Cambyses never reached that Aethiopia. His army was turned back "before he had accomplished one fifth of the distance" (Herod. 3, 25).

The persea is mentioned in the Chinese writings centuries before the time of Cambyses. *Ency. Brit.*, art. Peach.

Petrie's excavations of the "Foreigners' camp" of Cambyses disclose that Cambyses had Mongolian troops with him. *Nature*, June 4, 1927, p. 814. The Aethiopia from which the peach came must, therefore, have been that "Aethiopia which looks toward India to the southeast" (Euseb., *Chron.*, p.12). See also *Deluged Civilization*, p. 52, and Bornemann's note to Xenophon, *Cyropaed.*, 2, 4, 1.

For general description of the land of the *Book of the Dead*, as derived therefrom, see Budge, "Osiris," Vol. ii, p. 155.

Note that the section of the Sekhet into which the col of the Pass of Dariel or the Set Tschert of Aragva, i. e., the Tschert valley (Ordnance map, F6), the "Sebat Tsert" or "Gates of Tschert" of *B. of D.*, chap. 17, leads, and which contains, a little down the valley (see map), the "Set Tschert" or Holy Mountain of Osiris, is definitely fixed as an "Oase" or "Nesos of the Blessed" (see Herod., 3, 26), by Strabo, 11, 14, 9; Ptolemy *Geography*, Chabala; Xenophon, *Anabasis*, 8, 25; Herod., 1, 104; 1, 110; 4, 37; and *Deluged Civilization*, chaps. 5, 7, 10, 11. Note also the Sober Oashe of Tamen, Ordnance and International maps. The Bata shore is called "Holy strand" in the periplus.

The *Customs* are perhaps sufficiently covered by the statement of Herodotus, quoted above, that "in their whole mode of life and in their language they resemble one another," and by what he says about their way of weaving, religious rites, etc. But a few others may be added.

Use of Mesquet. The "Mesquet was originally the skin of a bull in which the deceased was placed." Budge, *B. of D.*, p. cxxxvii. Originally it was in the shape of a bull, and later, of a bag. Diod. Sic., 1, 3. and 1, 6. Sometimes resins and spices were used for preserving, otherwise drying, *ibid.* For use of silk bags at the Baku serachi, see Abercromby, *Caucasus*, p. 292. The Colchians placed the dead in mesquets and hung them on trees to dry (Appol. Rhod., *Argonaut*, bk. 3, lines 200 seq.). When dried, the mesquets were removed to the Ket Seker (see Abercromby, above).

Kabardi or Kapurti lock. The braided lock of hair originally used for fastening on the head-dress totem, Diod. Sic., 1, 5; and Sanchuniathon, Eusebius, *Prep.*, p. 38; *Chinese and Arab Trade Records* (Hirth and Rickhill), p. 83; For use of these head dresses, by the Cimmerians, Plutarch, *Marius*, and Strabo, 7, 2, 2. The custom seems to have been introduced into Tamen at the time of the transfer, due to earthquakes and deluge and invasion, of the Kalacha from Iberia and the Alizon to Tamen; at which time all the gods except Zeus and Athena, the gods of the Kalas (Achelous) river district were driven to the extreme west of the isthmus. (Smith, *Class. Dict.*, art. Typhon.) It was this custom which gave origin to the story of Circe, the Sarmatian queen (Diod. Sic., bk. 4, 1), who lived in the nese of Anapa, now Novorossisk, from which Corinth and Syracuse were settled, and was queen of the Circetae or "Scorpion men," near Lake Kirki (Ptolemy map, and Oswald map). Kirke is Egyptian for Isis and sorcerer. (Petrie's *Palace Titles*.) For Egyptian account *Deluge*, Diod. Sic., 1, 2.

Kurbeis. Map and sailing directions carved and painted on stone pillars or three-sided pyramids of stone. Kept in the business section of the temples. See Apoll. Rhod., *Argonaut*, bk. 4, lines 278 seq., and rubrics to *B. of D.*, chap. 30B, 64, 148.

ARYAN, GREEK, MESOPOTAMIAN, "SEMITIC," HOME-LANDS

Vedic Place-Names. - A considerable number of the place names of the Greek, Mesopotamian, and "Semitic" homelands have been identified in the isthmus in the writer's 1923, 1924, and 1926 papers, *supra*, the route of the Argonauts has been traced as down the Kuban, up the Tanais to the Caspian, and back by the Alontas; and the Ur of Abraham has been shewn as not in Mesopotamia, but far north; and a few Aryan place-names have been identified. These may be supplemented by the following river names from the Vedas, taken from the list of names given in Macdonell and Keith's *Vedic Index of Names*. The first of each triplet is the name as it occurs in the Vedas; the second is the identification proposed by Childe, *The Aryans*, p. 33; the third is that found by the writer.

Kubah. Kabul. Kuban.
Krumu. Kurrum. Krimi.
Gomati. Gomal. Gomatir.
Vipas. Biyas. Afips.
Parusni. Ravi. Parss.

These, and others, are all in the neighbourhood of the Sindi territory; the Gumatir, in fact, runs into the "Sindi harbour," Tamen peninsula. See Strabo, 11, 2, 10?14. The "Kapurti lock" of the Indian Gods, and the "Dvipa Sakhadara," have been referred to above. Chemmis and Panachia mean the same thing, i. e. "Land of the Five (or, all the) Tribes. (Phoenician Dict. and Diod. Sic. 1, 1.) As the Sindi did not have to go to the Dvipa Sakhadara by sea, their dog was not the Gerber of the Greeks and Egyptians, but Cabala (Keith's *Religion and Philosophy of the Veda*, part 4, sect. 2), the city (Cabala means "Place of Entrance") at the head of the Alizon

R. which guards the pass, cut through the rocks of the Cambysene (Strabo, 11, 3, 5 and 11, 4, 5), to the Alizon valley. Cay?bala is the Havilah of Genesis 2: 11.

POSSIBLE ORIGIN OF THE "BOOK OF THE DEAD"

There can be no reasonable doubt, in view of the astonishing coincidence of place-names, that the Caucasus isthmus was the land of the *Book of the Dead*. It was also, as I have shown in the 1923, 1924, and 1926 publications referred to, the homeland of the Greeks, Mesopotamians, "Semites," and Aryans; and the "Bitter River" of the Mesopotamians was the Adjai-Tchai River, near Tabriz (formerly the Abur).

It appears that the Egyptians, like the Chinese, were very desirous of being buried in the home-land. "What is a greater thing than that I should be buried in the land where I was born?" (Story of Sinuhe); "Make me a burial place in Ament, the land of Iberia" (generally translated "place of rest of heart," but Iberia can be supported); "He attaineth unto a happy funeral and burial in Ta Tchesert" (i. e., Tschert valley leading into Iberia), *B. of D.*, chap. 183. See above for location of Gates of Tschert

To ship the bodies back from Egypt to the South Caucasus isthmus, they would have to be dried or embalmed. This is probably the origin of the Mesquet (see above), and the hanging of it on-trees, supra. "The Mesquet was originally the name of the bull's hide in which the deceased was wrapped *in order to secure to him the new life*" (Budge, *Legends of the Gods*, p. 164). There would be kurbeis in the Egyptian temples (see Kurbeis, above), giving the sailing directions and route through the tribes and the pass-words by which the tribal chieftains could recognize that the bearers were the duly authorized representatives specified by the treaties by which the transport was arranged. When communication between Egypt and Ament was finally broken off, by the closing of the straits of Bosporus or Manytsch by hostile nations, or other cause, these kurbeis would lie unused and forgotten and lost and buried. When they were rediscovered (see *B. of D.*, chaps. 30B, 64, 148), they would be correctly read as directions whereby the corpse of the dead man could reach the oases or neses of the blessed, the old home in Amentet. But, the location of the old home-land being forgotten in the thousands of years that had elapsed, it would be interpreted not as a burial land but as a land of the dead.

This is a possible explanation of the origin of the *Book of the Dead*, and the writer's work leads him to believe that it is in all probability the true one. It must be remembered that the above data are only a minute fraction of the two hundred thousand and more references which the writer has collected and tabulated relating to this district and the old empires of Egypt, Greece, Babylon, Phoenicia, India, Persia, and others.

DATE OF THE "BOOK OF THE DEAD"

Philologists will note that there are no consonant shifts in the identifications of the Hidden Land (Ament. Note that Tamen also means "Hidden Land," see Hebrew Dict.), place names of the *Book of the Dead* with places in the Caucasus isthmus, with the possible exception of my identification of Coraksa (western horizon or west Caucasus

range, Strabo and Pliny) with Kheraka. This indicates a very early date for the *Book of the Dead*, and the accurate transmission of the names is in striking contrast with the loose transcription found in such later records as the Tel Amarna tablets. Even if there were no other evidence, we would know that it must be pre-dynastic. Incidentally this work has developed the fact that many, if not most, of the supposed consonant shifts are not changes in pronunciation but changes in words. I.e., *r* does not become *l* because of softening, but because *ur* in the one language meant the same thing as *el* in the other language, i.e., god or power. And so *n* becomes *m*, because "an" meant the staff placed before the tent to signify the chief, and "am" meant "power of."

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